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FIFTH BIENNIAL REPORT

OR THE

***TWENTY-FIFTH AND TWENTY-SIXTH ANNUAL
REPORTS***

OF THE

STATE BOARD OF HEALTH

OF THE

STATE OF KANSAS,

FROM

JANUARY 1, 1909, to DECEMBER 31, 1910.

**STATE PRINTING OFFICE.
TOPEKA, 1911.**

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W. J. V. DEACON, Statistician, Topeka.

STANDING COMMITTEES.

On Statehouse, Public Buildings, and Charitable Institutions.—Doctors
Lerrigo, Alexander and Thompson, and Mr. Welch.
On Water Supplies and Sewage.—Doctors Carver, Huffman and Aldrich,
Mr. Welch and Professor Marvin.
On Embalmers, Barbers and Epidemic Diseases.—Doctors Milligan, Co-
burn, Crumbine and Greenfield.
On Adulterated Foods and Drugs.—Mr. Welch, Professors Bailey, Sayre,
Willard, and Doctor Crumbine.

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LETTER OF TRANSMITTAL.

OFFICE OF SECRETARY OF STATE BOARD OF HEALTH,
TOPEKA, KAN., May 1, 1911.

To His Excellency, W. R. Stubbs, Governor:

SIR—In compliance with the laws of this state, I have the honor to herewith submit to you the fifth biennial report, or the twenty-fifth and twenty-sixth annual reports consolidated, of the Kansas State Board of Health, for the years 1909 and 1910.

Very respectfully,

S. J. CRUMBINE, M. D., *Secretary.*

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FIFTH BIENNIAL REPORT.

MINUTES OF QUARTERLY MEETING.

DECEMBER 2 AND 3, 1908.

The Board met in quarterly conference on December 2, at the office of the secretary. Upon roll call the members were all present except Doctor Locke.

The minutes of the annual meeting were read, approved and ordered placed on file.

The secretary then read his report, which was approved and ordered placed on file.

Upon motion, a committee of three was appointed to draft a resolution requesting the members of the Kansas delegation in Congress to favor the restoration of a sufficient appropriation to the United States geological survey for the purpose of reestablishing gauging stations upon the watercourses in this state that are subject to overflow. The committee, composed of Mr. Welch, Professor Hoad and Doctor Huffman, thereupon presented the following resolution:

Resolved, That the State Board of Health of Kansas believes that the government of the United States ought, in the interests of sanitary science and public health, to take up and continue the work of the hydrographical branch of the geological survey, pertaining to the waters of the state, and hereby request our representatives in Congress to favor and work for such measures as will be effectual in accomplishing these results.

This resolution was unanimously adopted.

Dr. Alexander then presented the following:

Resolved, That the action of the secretary in regard to alum in pickles, as set forth in his circular letter of September 2, 1908, be approved.

This resolution was unanimously adopted.

A motion prevailed that the Board request a continuance of the milk investigation as undertaken by Professor Billings, under the direction of the secretary.

A spirited discussion then followed concerning industrial wastes and their discharge into the natural waters of the state, which discussion was to the effect that the Board favored such legislation as would authorize and equip the Board to investi-

gate the matter of industrial wastes, and to solve the problems of mine wastes, in so far as it was possible to solve them, at the earliest possible date.

A motion then prevailed that the action of the secretary and the sanitary engineer in approving sewerage systems and water supplies, as outlined in the secretary's report, be approved by the Board, and that the rulings thereon be adopted as rulings of the Board.

The following regulation was then introduced by Mr. Welch:

SECTION 1. Be it ordered by the State Board of Health, that the wholesale dealers of the state of Kansas be allowed to sell such pickles containing alum as they may now have on hand, until January 1, 1909, providing that each package be stamped or tagged with the following legend: "On hand September 1, 1908," and that each label bear a statement of the presence of alum; and provided, that jobbers may not replenish their stock with alum pickles after September 1, 1908.

SEC. 2. That retail dealers be allowed to sell such pickles containing alum as they may now have on hand, or purchased before January 1, 1909, until September 1, 1909; provided, that each package in the hands of the retail trade shall bear a legend or tag, "On hand September 1, 1908"; that the label on each package shall bear a statement of the presence of alum; and provided further, that retailers may not replenish their stock with alum pickles after January 1, 1909.

SEC. 3. That after January 1, 1909, no wholesale dealer, and after September 1, 1909, no retail dealer shall sell, keep for sale or offer for sale any pickles containing alum.

Doctor Lerrigo then read the report of the committee on their visit to the Kansas Penitentiary, which is as follows:

LAWRENCE, KAN., November 13, 1908.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR DOCTOR CRUMBINE—Pursuant to your instructions, your committee visited the State Penitentiary, at Lansing, November 11, 1908. We inspected particularly the condition of the prison and the sanitary surroundings of the inmates.

We find that several very material improvements have been made by the warden since the time of our last visit, which was October 22, 1907. Among the improvements may be mentioned a stone floor, which has been laid in the kitchen, a sanitary cement floor, sloping toward the edges, in the tent which is used as a hospital for tuberculosis patients, and especially the equipment of the coal mines with telephones and electric lights. The superior lighting greatly facilitates the keeping of the passages in the mine clean and free from refuse.

The stable where the mules are housed is in fine sanitary condition, so that not the least odor can be noticed. The principal gangways and the stables are kept thoroughly whitewashed. This better lighting will also conduce to the comfort of the men, and no doubt to still better discipline. The shale mine has been extended, and special precautions have been taken to guard against injury from the falling of the roof.

It is very important that some steps be taken to furnish better ventilation in the kitchen, according to plans suggested by the warden, and to provide the bakery with a cement floor. The rough stone floor now in use is very unsanitary and the dirt can not be readily cleaned out.

The food and supplies used appear to be of excellent quality. It would be a good plan to have about fifty more cows in addition to the twenty-four now on the farm, so that the inmates could be supplied with a large quantity of fresh milk, which is a valuable addition to their diet. By the extension of the water supply a larger quantity of good water has been obtained, and we believe this supply to be at present very satisfactory.

Some of the cell houses are still crowded, on account of the Oklahoma prisoners who are boarded at Lansing. We believe it is important that a new cell house should be constructed, or at least the interior of one of the old ones should be overhauled, and the cells should be built after the pattern of the best practice at the present time. Great improvements have been made in heating, lighting and ventilation of the cells and sanitary plumbing, since the first cell house was built. This should be taken advantage of in any new building to be erected.

Better facilities should be provided for the isolation and care of the criminal insane. This can be arranged by using the women's section of the prison, which is thoroughly up to date, for this purpose, and constructing a comparatively small building for the women's ward. Considering the means and facilities at his command, we believe that Warden Haskell has been very successful in his work.

The above is respectfully submitted by your committee.

CHARLES H. LERRIGO.

CLAY E. COBURN.

E. H. S. BAILEY.

The committee appointed to confer with a similar committee appointed by the state veterinarians reported progress, and upon the invitation of the president, Doctor Schoenleber, state veterinarian, made the following remarks:

We find a great many things to contend with when we start to legislate against the tubercular dairy cow. In the first place, according to the government report, Kansas has 722,000 dairy cows. We are putting it at a very conservative estimate that 15 per cent of those cows will react to the tuberculin test, making over 100,000 tuberculous or reacting cows, not speaking of the beef-producing animals or the tuberculous hogs, which will be considered later on. In some herds we find as high as 35 per cent, and often as high as 80 per cent, which respond to the tuberculin test. But according to packing-house and slaughter-house statistics, there would be less than 2 per cent condemned. If the state should reimburse the owner of the dairy cow, where would they stop? In the first place, we could not test 722,000 cows in a year. We could not find the tuberculin with which to do it. This matter has been put up to the Sanitary Commission, your secretary and myself. What will we do with those cows that have reacted? I do not think that we can

handle them. I do not think we can compel the owner to dispose of them. Now, if the state is going to pay for them the appropriations would have to be so large that the legislature would not think of it. If, however, the state would reimburse for the condemned animals, then it could be done.

The secretary expressed the opinion that there should be legislation excluding the sale of milk excepting such as was from tuberculin-tested cows that had not reacted from such test, and that probably that is as far as legislation could go at this time.

Professor Hoad, the Board's sanitary and civil engineer, then read his report, which is as follows:

REPORT OF THE SANITARY ENGINEER.

DECEMBER 2, 1908.

Your sanitary engineer respectfully submits the following report of the work of his office since the annual meeting of the Board in June of the present year. It is not the intention to speak in detail of the many matters that have been presented for investigation or action, but only to present in a condensed form an outline of the work that has been done. Advantage is taken of this opportunity, however, to describe at some length the results of two or three investigations that have been carried out, either because of their especial importance or because of some feature of particular interest connected therewith.

As heretofore, the principal work of the engineer's office has been connected with the approval of plans for new waterworks or sewerage systems, or for extensions to old systems. Each case has been made the subject of an investigation, except at cities where a previous investigation could be made to answer.

A considerable proportion of the waterworks extensions passed upon were in the nature of developments of new and better sources of supply or of betterments to existing supplies. In a number of instances a new supply of ground water has been or is about to be secured to replace a former surface water supply. This is particularly gratifying, for improvements of this kind are directly and largely helpful in improving the general health conditions of the state. A bad city water supply is not only a constant menace to the inhabitants of the city in question, but also is a source of discomfort and sickness to the traveling public in even greater proportion. This is because visitors to the city are usually practically forced to use the public supply, even though the citizens themselves may have private supplies for their own domestic uses; because the conditions of traveling make people peculiarly susceptible to the effects of bad water; and because by constant usage most people acquire a certain degree of immunity from the deleterious effects of certain kinds of bad water—an immunity not shared by the newcomer or the occasional visitor.

It is evident that in the matter of water supply no municipality lives to itself alone. It is necessarily interested in the supply of every

other municipality with which it may have any interchange of visitors. Particularly the smaller cities are vitally concerned in the character of the water supplies of the larger cities with which they have the most communication. Thus the character of the water supply of Kansas City, of Topeka, of Wichita, of Atchison, of Pittsburg and of Coffeyville is of vital concern to nearly every one in the state who does any traveling at all. The purity of the water supplies of Lawrence, Emporia, Manhattan, Baldwin and other college towns should be of serious moment to the whole state. In a narrower range, the sanitary quality of the public water supply at the county seat of every county in the state is a matter of importance to practically every citizen of the county.

WATER SUPPLIES.

Your engineer has been required to make investigations or has been called upon for consultation in connection with public water supplies at the cities mentioned in the following paragraphs:

BONNER SPRINGS.

In view of a prospective large development as a residential suburb of Kansas City, the city of Bonner Springs has adopted complete plans for a waterworks system, as well as for a complete system of sewerage. The first idea was to develop a supply from some of the famous springs from which the town derives its name. It was pointed out to the mayor and council, however, that the springs were situated on very low ground, that they came from fissured limestone strata above which numerous residences were built, and that the probability of future if not of present contamination was very great. They were advised to develop a supply from wells sunk into the sand and gravel on the south side of the Kaw river, opposite the town, and to carry the supply main across the river on the highway bridge. This suggestion was followed, and an abundant supply of excellent water was developed from the Kaw river underflow.

Before approving the plans, your engineer required the city to purchase a small tract of land adjoining the pumping station and well, upon which a small house and barn were located, and to remove the house and barn and obliterate the feed lots, pens, and the like, and to clean up the premises thoroughly.

The water obtained from this well is especially interesting inasmuch as it contains very little iron, a condition different from those at other points where ground water from the Kaw river bottoms is used. The iron may develop later, however. The works at Bonner Springs are now under construction.

COTTONWOOD FALLS.

This small supply is taken from a large spring about two and one-half miles from town. This spring is in the midst of a prairie-grass pasture of several hundred acres extent, and furnishes a dry-weather flow estimated at 200,000 gallons in twenty-four hours. There are other springs in the immediate neighborhood sufficient to add about 100 per cent to this flow. It is believed that there is not a single dwelling on the drainage area tributary to the spring. The area, where not too rocky, is still covered

with the virgin prairie sod. A concrete tunnel is to be driven into the rock ledge for a short distance, in order to take the water before it can be contaminated by any surface drainage.

In addition to its good sanitary quality, a very important feature of this spring is the fact that it is situated at a sufficient elevation above the town to enable it to be served to users by gravity alone, no pumping whatever being required.

ST. MARYS.

A new waterworks system for this small city was planned with the expectation of taking a supply from wells in the eastern or lower end of town. Other wells, supplying the college, a brick plant, and other industries, as well as numerous residences, indicated that a sufficient supply for the city could probably be obtained in this locality.

As a result of an investigation in company with and with the assistance and advice of Professor Bailey, your engineer condemned the proposed location as being probably subject to present and almost certainly subject to future pollution. A likely location just above the upper or western end of the town was finally selected, and the mayor and council directed to prospect for water at this point. This was done, after some little holding back. The results of the search amply justified the change, however, for a magnificent bed of water-bearing gravel was found at this point, overlaid by a thick stratum of hard, indurated clay through which no polluting substance can possibly reach. A chemical analysis of the water from the prospect well sunk here shows it to be very much better than that from any other point in town. In connection with this investigation some fifteen or sixteen different samples of water were analyzed at the University laboratories.

The contract for this work has recently been let. The design provides for a combined water and electric-light plant. When finished this plant will be one of the most attractive small plants in the state.

GARNETT.

The Garnett municipal filter plant, to filter the water of the impounding reservoir before pumping it into the mains, was finished early last spring. The results obtained from the plant were not just what was expected, however, and there had been considerable complaint regarding the condition of the water served to the public. Your engineer was asked to come down to make an investigation into the workings of the plant and to advise the city concerning its operation.

In order to make a series of tests of the bacterial efficiency of the filters your engineer asked Mr. W. A. Starin, formerly the Board's laboratory assistant in bacteriology, to accompany and assist him. Mr. Starin very courteously agreed to do this, and prepared all the necessary culture media, inoculated the plates, and finally incubated the samples collected and made the bacterial counts. In addition to the test of the bacterial efficiency, a study was made of the manner and rate of operating the filters, of applying the coagulant, and of the amount of coagulant used per thousand gallons of water for the varying conditions of the raw water in the pond. As a result of the investigation, a report

was made to the mayor and council containing recommendations that the filter be operated at a somewhat lower rate, that a very much larger amount of coagulant be used, and that more care be taken to get the coagulant properly distributed. These recommendations were ordered carried out by the council.

ARKANSAS CITY.

At this place a particularly interesting situation has developed, which it is desired to report in some detail.

To one not especially informed on the subject, the fact that any given water supply is taken from a natural spring seems of itself sufficient evidence of its high quality. To most people, sparkling water from a spring is the very type of purity and wholesomeness. But from the very conditions that go to make a natural spring of any large size possible, namely, the presence of a highly permeable or of a discontinuous stone stratum—in this part of the country usually a fissured or cavernous limestone—with a gathering ground situated above the level of the overflow of the spring and, of course, sufficiently large to receive and store from the rainfall the continuous yield of the spring, it is easy to see how the spring supply may become contaminated by human or animal wastes, provided the drainage area is inhabited, particularly in the neighborhood of the spring itself. It should be recognized that a natural spring is not artesian in character—is nothing more than the appearance at the surface of the ground of a portion of the general body of ground water.

The waterworks of Arkansas City, originally built and operated by a private water company, are located in a low and marshy area of ground, in fact, in an old slough, or a portion of an old-time river or stream bed. One or more strong springs bubbled up out of the underlying bed rock at this point, and the largest of these was utilized as the source of the public water supply. The waterworks for some years have been owned and operated by the city, and it has been generally thought that the quality of the water was good; indeed, from the fact that it was spring water, it was believed to be exceptionally good and wholesome.

When Mr. H. N. Parker, assistant hydrographer of the United States geological survey, visited the place, about a year or a year and a half ago, he collected samples of the water and tested them for the *bacillus coli communis*. Positive reactions were obtained, indicating the presence of contamination from animal sources. In the latter part of July of the present year your secretary and engineer spent several hours in the city, in looking into the drainage of certain low-lying and marshy areas near the pumping station of the waterworks. While there they collected other samples for *coli* tests. The presumptive tests showing positive reactions, a long and careful series of confirmatory tests were carried out in the bacteriological laboratory of the University, which resulted in the complete identification of the germ.

Largely owing to the demands made upon the laboratory by the milk investigation then in progress, it was about six weeks before the final results of these confirmatory tests could be obtained. Following this, however, in the latter part of September, your engineer made

another visit to Arkansas City, for the purpose of trying to establish beyond reasonable doubt the source of the *coli* contamination, and to advise the mayor and council in regard to its elimination.

It is needless here to enter into the details of this investigation. It will be sufficient to say that the geological formations, the topography and the surface drainage of the neighborhood, with the past history of the waterworks, were carefully studied. The testimony of old settlers who were acquainted with the ground before the waterworks were built was sought. The power canal from the Arkansas river, running within a stone's throw of the waterworks and at a level of ten or twelve feet above the spring, was carefully studied in regard to seepage from its west bank.

As a final result it was determined that the spring from which the municipal water supply is taken is located on a large fissure in the bed rock underlying the neighborhood, the water rising in this fissure by reason of the hydrostatic pressure from the higher ground water to the north and east. That this fissure extends in a direction approximately parallel to that of the power canal. That at a distance of between one and two blocks north of the pumping station this fissure crosses the site of an old marsh that has been largely filled up, partly with stable manure and miscellaneous refuse from the city. In other words, this area has been in years past a city dump, the idea in allowing this being that by so doing the elimination of the marsh would be secured.

In the judgment of your engineer the principal source of the *coli* contamination in the water supply is from this marshy area. In recent years the demands upon the waterworks have been heavy, and the spring has been pumped down much lower than was formerly necessary. This depression of the water level has allowed this marshy ground adjoining to be largely drained into the spring, thus augmenting the supply, but at the same time bringing in the contamination.

The city was at this time desiring to improve a lot of this low-lying area above and near the waterworks, much of which had been acquired for a city park. A part of the area was being brought up to a higher level by filling, a much larger part was being drained, and plans were under consideration for the formation of a lake of several acres extent between the canal on the one side and a railroad embankment on the other, with an earth dam at the end toward the waterworks. It was recommended to the mayor and council that in view of the connection between the site of this proposed lake and the city water supply, the improvement should be planned in harmony with the following suggestions:

That the muck and mud that covers the present area of the marsh should be scraped up to the sides, where it should be formed into a driveway around the margin of the proposed lake. The dam should be formed of better material, taken from the adjoining ground, or brought over from the higher ground east of the canal. A concrete spillway, reaching to bedrock, should be built to take care of the overflow; this overflow to be discharged into a protected ditch leading past the pumping station.

Any deposits of decaying refuse not suitable to be used in the roadway embankment should be hauled away and wasted.

That the whole area outside of the lake should be smoothed up and sown with Bermuda grass, and laid out in walks and driveways like any other well kept park.

That by cleaning all the muck and mud from the site of the lake, the water stored therein would not deteriorate in quality, as it would do if stored over a marsh. Also, by maintaining a depth of five feet or more of water the growth of aquatic plants could be kept down to a minimum, and by avoiding shallow margins the breeding of mosquitos could be largely prevented.

That this improvement would result in a betterment of their water supply, but would not insure freedom from all contamination, as there would still be a more or less direct connection between the spring at the pumping station and the bottom of the lake, without thorough filtration between.

That the city should recognize the fact at once that an efficient system of filtration would eventually be necessary in order to have thoroughly good water. The lake, however, could be made a help in this direction, by making the problem of filtration easier when it comes.

BELOIT.

Reference was made in the last report to the development of the new water supply at Beloit and the purchase of the waterworks plant by the municipality. Since that time final plans for the new plant have been approved. This action followed a lengthy correspondence regarding the matter of maintaining pumping connection with the old Solomon river intake for use in case of emergency.

WASHINGTON.

A visit was made to this city in July to investigate the local situation with reference to a new additional supply for the municipal waterworks plant. The proposed new supply was a group of deep wells located on high ground at the outskirts of town, and was approved.

BALDWIN.

A visit was made in August to this college town to advise with the mayor and council regarding several possible sources of supply for a proposed new municipal waterworks plant. The bonds for the construction have since been voted, but the plans for the work have not yet been finished.

WINFIELD.

This city proposes to change the source of the supply of its municipal water plant from an inadequate well, furnishing water objectionable in mineral content, to the Walnut river, a thoroughgoing system of purification being proposed to make the new supply wholesome. The purification system as planned comprises sedimentation basins in which the suspended impurities may be settled out with the help of coagulants, followed by filtration to remove very fine sediment not amenable to the settling process and the bacteria. The details of the plant are well planned, and when built it will be probably the most up-to-date and

efficient filter plant in the state. A guaranteed removal of 98 per cent of the bacteria is required by the filter contract.

WINFIELD IMBECILE ASYLUM.

On account of the occurrence of typhoid among the inmates at this institution, an examination of the water supply for sewage contamination was made. The test gave a negative result.

ELLINWOOD.

Your secretary investigated this proposed supply, which is to be taken from deep wells just west of the Santa Fe railroad station.

AUGUSTA.

A visit was made to this city to inspect several proposed locations of wells for a new municipal supply. In company with the designing engineer for the plant, your engineer made a careful examination of the entire section of country within which wells might be located. A decision was made in favor of a certain restricted area, and the mayor and council directed to prospect for water in this vicinity. The plans for the works are not yet completed, hence no formal action has been taken in the matter.

MOUNDRIDGE.

A recent visit was made to this town of about 750 population, for the purpose of inspecting a proposed supply for a new municipal waterworks plant. The supply is to be taken from a shallow well sunk into an extensive sand bed at a point on the outskirts of and somewhat above the town. The plans for this plant have not yet been completed.

DODGE CITY.

In response to a request from the mayor, your engineer recently spent two days in this city in advising with the city council in regard to a new franchise to be granted to the local waterworks company. As is known to the Board, the Dodge City water supply has been up for consideration several times before. Advantage was taken of the opportunity afforded by the recent drilling of a twelve-inch hole near the waterworks plant, in an effort to find oil or gas, to secure some valuable new data regarding deep-well water in this locality, and the city administration was urged to try to reach an agreement with the water company on the basis of a new and better supply from the deeper source. At last reports the final outcome of the matter was still in doubt.

COFFEYVILLE.

Your engineer was called to this city early in November to advise regarding proposed additions to the settling basin and relative to the advisability of using some chemical coagulant to assist in settling the Verdigris water, which constitutes the present city supply. As is his custom whenever an opportunity presents itself, your engineer urged upon the mayor and council the desirability of developing a ground-water supply for the city, should this prove to be feasible, and of discarding entirely the polluted river water. Some time was spent in looking over the bottom lands above the city, and the mayor finally agreed to set a prospecting party in the field to see what could be found.

Nothing definite has as yet been determined, but a telephone conversation about a week ago with Mayor Skinner conveyed the information that a very extensive bed of coarse and clean water-bearing gravel had been found, and that the prospect seemed good for the development of a sufficient supply from it.

This city uses about 3,000,000 gallons per day, approximately one-half going to the large industrial consumers and the other half to the ordinary small consumers. The development of a ground-water supply of this magnitude is a matter of no small moment.

In addition to the foregoing, plans have been approved, or visits of investigation made, or advice given by correspondence or otherwise, to the cities of Kiowa, Chanute, Geuda Springs, Sedan, Peru, Burlington, Fort Scott and Osage City.

Your engineer wishes to avail himself of this opportunity to state again that in his judgment it is extremely desirable that the water and sewage law be amended in such a way as to give to the State Board of Health a certain degree of control over the operation of waterworks plants furnishing water to the public for domestic purposes. In the case of plants involving the purification of water this is particularly desirable, as the wholesomeness of the water served will oftentimes depend entirely upon the careful use of well-planned and scientific methods of operation. A somewhat close acquaintance with the design, construction and operation of a considerable number of plants where some form of purification is employed leads to the belief that their weakest point, from a sanitary point of view, is in their operation. For example, it would be easy to name places where the method of applying coagulant to the water for sedimentation or filtration purposes is about as follows: The quantity to be used for the day's run is merely guessed at, in the first place, not even the simplest test being made for the purpose of gauging the quantity. This is usually guessed at as so many shovelfuls, or pailfuls, of alum or lime or copperas, as the case may be, and the amount is thrown into a barrel or tank of water. The solution is then drawn off from this tank during the day and mixed with the water to be treated, other water being added to the tank to take its place. The inevitable result is that that part of the solution drawn off early in the day is much stronger than that drawn off later. When only small quantities of chemical are used the whole amount may be dissolved and drawn off before the day's run is half over, the latter half of the daily supply receiving almost no coagulant whatever. Your committee on proposed amendments to the water and sewage law has formulated a paragraph covering this point, for incorporation into the law, which it is hoped will have your hearty support.

SEWERAGE AND SEWAGE DISPOSAL.

In regard to sewerage and sewage disposal and the pollution of streams, the engineering office has made investigations on the ground, has approved plans, or has given advice by visits or by correspondence to the following-named list of cities and towns.

MINNEAPOLIS.

Investigation relative to sewerage and sewage disposal. Sewage treatment plant required, and plans for sewer district No. 1 approved.

TOPEKA.

Approval of plans for new district sewer.

NEWTON.

New location of, and plans for, sewage disposal plan. Revised location of main sewer investigated and approved. Advice to mayor and council regarding new sewer districts and the elimination of nuisances produced by discharge of crude sewage into small streams.

PEABODY.

Investigation of local situation with reference to proposed sewerage of town. City advised to change location of outlet, and to include sewage treatment plant in plans.

PRATT.

Investigation and approval of plans for sewerage of city. Particularly with reference to the effect of effluent of disposal plant upon State Fish Hatchery.

LARNED.

Approval of plans for sewers for two new districts. Advice to city engineer and to mayor and council concerning design and construction of sewers, and sewer maintenance.

BONNER SPRINGS.

Approval of plans for new sewerage system for the town. The investigation incidental to this action resulted in a change in the proposed location of the sewer outlet to a point considerably farther down the river, at a very slight increase in cost.

HORTON.

Investigation of nuisance created by discharge of crude sewage into old-time stream bed of small branch of Delaware river. Advice to mayor regarding purification of sewage and elimination of nuisance.

IOLA.

Advice in regard to planning additional disposal plant.

FREDONIA.

Advice relative to protection of water supply from contamination by sewage from newly constructed municipal sewerage system. Changes in original disposal plans approved.

KANSAS NATURAL GAS COMPANY, INDEPENDENCE.

Advice relative to sewerage and sewage disposal for small community near Independence. No action taken as yet.

COFFEYVILLE.

Advice relative to plans for sewers for district No. 3, and to plans and specifications for septic tank for districts Nos. 1 and 3.

GARNETT.

Investigation of nuisance produced by discharge of crude sewage into dry bed of small ravine; also investigation of wastes from local slaughter house. Advice to mayor and council regarding complete sewerage of the town, and regarding sewage disposal.

MANHATTAN.

Investigation of present private sewer system and advice to mayor and council regarding its purchase and incorporation into a new municipal system. Also, regarding storm drainage and cellar drainage for the town.

DODGE CITY.

Investigation on the ground with reference to comprehensive sewer system for the city, and advice to city officials regarding location of outfall sewer and sewage disposal.

M'PHERSON.

Investigation of nuisance created by discharge of effluent from septic tank into dry stream bed.

OSAGE CITY.

Investigation and advice to mayor and council with reference to sewerage of city, drainage of cellars and subsoil, and surface drainage. Particularly with reference to the utilization of abandoned mine workings for the sanitary drainage of the city, and to the disposal of the city's sewage.

HIAWATHA.

Approval of plans for new district sewer, with independent disposal plant. Also investigation of operation of existing disposal plant, and of alleged nuisance created by discharge of sewage therefrom, and advice to mayor and council regarding proper care and maintenance of disposal plants.

WELLINGTON.

Investigation of plans for sewerage and sewage disposal for two new sewer districts.

SANITARY INVESTIGATION OF FLOODED DISTRICTS.

Immediately after the annual meeting of the Board in June your engineer accompanied your secretary in a visit to North Topeka and to Armourdale to investigate the effects of the recent high water in the Kaw river upon the sanitary conditions at these places. At Topeka the investigation was aided by the city engineer, who accompanied the party, and at Kansas City the expedition was directed by the local member of the State Board of Health, the city health officer and city engineer. Certain recommendations were made in each place relative to the draining of pools of standing water and the cleaning up of filth.

SEPTIC TANK COMPANY.

In August a conference with the general manager of the Cameron Septic Tank Company, of Chicago, was held in Lawrence, concerning the policy of this company with reference to sewage-disposal plants in Kansas. An entire afternoon was spent in going over the ground most

thoroughly and in deciding upon the basis for future action. In this conference your sanitary adviser and engineer reached agreements with the Septic Tank Company distinctly favorable to the state.

Respectfully submitted.

W. C. HOAD, *Sanitary Engineer.*

Doctor Greenfield, the Board's bacteriologist, then gave a brief report of the work of her department.

Professor Stimpson, of the University, then made a brief talk on weights and measures, which was discussed somewhat at length by the members of the Board, whereupon the following resolution was adopted:

Resolved, That the State Board of Health is in favor of legislation providing for uniformity in weights and measures, and providing penalties for selling by false weights and measures.

It was understood that the attorney, the secretary and Professor Stimpson should present a bill to the legislature for the purpose of revising the present law on weights and measures.

No further business coming before the Board, they adjourned.

The following bills were audited and allowed:

C. H. Lerrigo	\$10 00
C. S. Huffman	28 10
J. B. Carver	26 24
C. E. Coburn	13 70
J. B. Carlile	28 25
C. D. Welch	27 50
A. B. Scott	38 32
B. J. Alexander	11 23
F. O. Marvin	2 43

On the following day, December 3, the State Board of Health met with county and municipal health officers in the fifth annual conference, when the following program was rendered:

- 9:30 A. M. Address, by Dr. A. B. Scott, President State Board of Health.
- 10:00 A. M. Schoolhouse Inspection and Fumigation, by Dr. G. P. Marner,
County Health Officer, Marion county.
Discussion.
- 10:45 A. M. Country Slaughter-house Inspection, by Dr. A. D. Updegraff,
County Health Officer, Harper county.
Discussion.
- 11:20 A. M. Question Box.—The Troubles of the County Health Officer.
Conducted by Dr. S. J. Crumbine, Secretary of State
Board of Health.
- 12:00 M. Recess.

1:30 P. M. The Value of a Wholesome Water Supply, by Prof. E. H. S. Bailey, Chemist State Board of Health.

Discussion.

2:00 P. M. Sewage Disposal and the Fly in Their Relation to Typhoid Fever, by Prof. William C. Hoad, Sanitary and Civil Engineer State Board of Health.

Discussion.

2:30 P. M. The Necessity for Compulsory Reports of Typhoid Fever and Tuberculosis, by Dr. C. B. Van Horn, President Topeka Board of Health.

Discussion.

3:00 P. M. A Plea for the Early Recognition of Tuberculosis, by Dr. O. D. Walker, County Health Officer, Saline county.

Discussion.

The attendance was larger than at any similar gathering of health officers yet held, and the papers were of a high order of excellence. The consensus of opinion seemed to be that the meeting was a most profitable and instructive one.

The following resolution was introduced and unanimously carried:

Resolved, That it is the sense of this conference that the annual meetings of health officers be continued, and that there should be a statutory law providing for the expenses of such officers in attendance thereon out of the funds of the respective county and municipal treasuries.

At four o'clock the conference was merged into the public meeting called by Governor Hoch for the purpose of organizing the Kansas Society for the Study and Prevention of Tuberculosis.

The meeting was a large and enthusiastic one, with an attendance approximating two hundred. The organization was effected by the adoption of a constitution and by-laws and the election of a board of directors. A quorum of the board of directors elected met at eight o'clock in the evening for the purpose of electing the officers of the association, which are as follows: Dr. S. J. Crumbine, Topeka, president; Dr. Frank Strong, Lawrence, first vice president; Dr. Harriet Comstock, Hutchinson, second vice president; Dr. L. H. Munn, Topeka, treasurer; Dr. C. B. Van Horn, Topeka, secretary. The members of the executive committee were then elected, as follows: The governor, state superintendent of public instruction, state labor commissioner; Dr. D. M. Fisk, Topeka, representing private educational institutions; Mr. L. M. Penwell, Topeka, representing the Traveling Men's Association; which, together with the president and secretary, *ex officio*, constitute the executive committee of the board of directors.

SECRETARY'S REPORT.

TOPEKA, KAN., May 1, 1911.

To His Excellency, W. R. Stubbs, Governor:

SIR—In accordance with that provision of the statute which requires the secretary of the State Board of Health to make biennial reports to you on the vital statistics and sanitary conditions and prospects of the state, this fifth biennial report, including the twenty-fifth and twenty-sixth annual reports, is herewith respectfully submitted.

From the reports of deaths received from health officers and assessors, which at once is admitted are incomplete, it would seem that the death rate in the state during the past two years has been about the same. The morbidity and mortality rate of the state is slightly increased during the past two years by the first appearance in the history of the state, in 1909, of an epidemic of anterior poliomyelitis. While it is probably true that there have been sporadic cases of this disease occurring in the state for a great many years, yet it is equally true that 1909 was the first year in which an extended epidemic of the disease was prevalent; there being reported to the department 61 cases with a mortality of 29.5 per cent. In 1910 there was a repetition of this epidemic more extended throughout the state, there being reported 189 cases from 35 counties, with a mortality of 24.86 per cent. Perhaps the most distressing feature of this disease is the great number of hopeless cripples left in its wake. In a study of the cases recovering, it was found that approximately but 20 per cent of the nonfatal cases recovered from the paralysis entirely. Experimental work in the study of the epidemiology of the disease has been carried on under the direction of this department at the University Medical School at Rosedale by Dr. A. L. Skoog, where also there have been a number of patients treated, affording the opportunity of careful clinical study of the disease.

It would appear from the reports that the morbidity and mortality rate from other infectious diseases have been slightly lessened, which is a matter for congratulation.

The legislature of 1909 appropriated \$20,000 for the inauguration of a state-wide educational campaign against tuberculosis. This campaign has been carried on through the medium of a traveling tuberculosis exhibit, in charge of Dr. S. C. Emley of the University Medical School, assisted by Mr. George Thompson of Topeka. At least one town in every county in the state has been visited, and in the year and a half ending January 1, 1911, more than a quarter of a million of our citizens have seen the exhibit and heard the lectures. This exhibit has also afforded the opportunity for a wide distribution of the preventive literature of the Board, which includes pamphlets on other infectious diseases as well as that of tuberculosis. It is believed that this state-wide educational campaign will result in untold benefit to the future generations, by the dissemination of knowledge concerning personal and public hygiene and sanitation. The willingness with which the legislature passed a bill providing for a state sanitarium for tuberculosis is but the logical result

of an aroused public conscience in the matter of tuberculosis control; and while the amount appropriated is insufficient to erect an institution such as Kansas should have, nevertheless it is a beginning in the right direction, which will ultimately result in an institution worthy of the name of Kansas.

The following comparative tables of infectious and contagious diseases for the years 1909 and 1910 will at a glance indicate the relative mortality of these diseases, and remind the reader also that tuberculosis still leads the list of preventable diseases in the slaughter of our citizens; although there are a greater number of deaths from pneumonia each year than there are from tuberculosis, which was also the case in the years of 1907 and 1908 of our last biennial.

Contagious and Infectious Diseases—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diphtheria.		Scarlet fever.		Smallpox.		Measles.		Chicken pox.		Cholera infantum.		Dysentery.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Pawnee.....																		
Phillips.....	4	4	2		1	1			10									
Pottawatomie.....																		
Pratt.....	5	5	5	5	7	4												
Rawlins.....																		
Reno.....	9	7	28	7	24		42	7	60		20	2	35		2	2		
Republic.....	7	4	17		2		13		10		33	1			1	1		
Rice.....	3		3	2	8	1	8	1	8		5				8	8		
Riley.....	8	5	12	4	31	7	8		29		6	1						
Rooks.....																		
Rush.....	8	2	2	2	4	1			2	1	2		10					
Russell.....	4	3			7	2	1								1	1		
Saline.....	17	17	18	6	4	2	2		35		12	1	4					
Scott.....	1	1	3	3														
Sedgwick.....																		
Seward.....	5	2					3				7		2		2	2		
Shawnee.....	6	5	6		28	6	20		136		5		9		1	1		
Sheridan.....			5	2			15											
Sherman.....	4	1									1	1			4	4		
Smith.....	5	5													5	5		
Stafford.....	10	10	5	1	5	1	29	8			19	2			5	5		
Stanton.....																		
Stevens.....																		
Sumner.....	16	16	43	11	9	2	22	1	18		89	3	1		11	10	2	
Thomas.....	7	4	21	3	6	2	13		4				12					
Trego.....	1	1	2	2	10	3	1								2	2		
Wabaunsee.....	3	1	1	1	14	2	6		21		46				1			
Wallace.....			5		4	1			2									
Washington.....			25	4	26	2	29	5			5							
Wichita.....																		
Wilson.....	8	6	4	4	3	1	2		2		3				4	4		
Woodson.....	2	2	5	5	11	1	3								2	2		
Wyandotte.....	9		4		30	4	35		37		7		1		1	1	3	

Cities, First Class:	11	11	10	6	24	1	23	1	6	1	2,517	47	445	212	185	195	60
Atchison.....	11	11	10	6	24	1	23	1	6	1	1	1	1	1	1	1	1
Coffeyville.....	133	133	173	50	232	22	129	7	106	299	299	2	32	14	12	5	5
Kansas City.....	41	23	51	6	59	1	24	1	1	30	30	1	1	1	1	1	1
Leavenworth.....	21	11	5	4	11	2	16	1	31	16	16	1	6	1	1	34	1
Parsons.....	12	12	7	7	19	3	5	1	4	72	72	1	15	6	6	3	1
Pittsburg.....	55	55	30	22	50	7	73	1	132	94	94	1	15	8	8	3	1
Topeka.....	37	25	73	36	44	6	54	1	38	463	463	1	6	13	13	3	3
Wichita.....	909	761	1,399	392	1,471	201	1,343	66	1,779	2,517	2,517	47	445	212	185	195	60
Totals.....	909	761	1,399	392	1,471	201	1,343	66	1,779	2,517	2,517	47	445	212	185	195	60

Vital Statistics Reported to the Kansas Board of Health for year 1910.

Contagious and Infectious Diseases.

	Scarlet fever.										Cholera infantum.		Dysentery.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Cherokee	30	26	18	5	32	4	15	2	21	56	4	8	2	3
Cheyenne	...	...	21	2	1	...	4	...	...	...	...	...	...	...
Clark	...	...	6	...	1	...	4	...	...	...	...	...	...	...
Clay	1	1	...	...	...	...	1	...	4	...	...	...	...	...
Clond	4	2	8	1	2	...	5	...	...	...	...	...	...	...
Coffey	12	9	16	8	3	...	22	2	3	74	2	4	1	...
Cornmanche	...	...	6	...	1	...	2	...	...	...	...	...	...	...
Cowley	24	24	15	3	42	4	72	6	13	13	...	...	...	...
Crawford	25	25	14	3	42	8	23	4	7	8	...	...	...	...
Decatur	1	...	4	...	2	...	...	...	59	14	...	...	...	...
Dickinson	2	2	5	...	4	...	3	...	31	22	1	...	...	...
Dunlaphan	14	10	8	6	2	...	33	3	98	36	2	...	...	...
Douglas	18	15	20	7	23	1	34	3	1	37	...	...	...	...
Edwards	3	...	19	1	6	...	20	...	7	1	1	...	15	3
Ellis	6	4	9	...	4	...	5	...	6	9	...	...	3	1
Ellis	2	2	16	2	20	1	6	...	3	4	...	...	...	...
Ellsworth	2	1	8	...	...	...	63	...	20	119	...	...	...	...
Finney	5	5	10	...	3	...	5	...	8	15	...	...	1	1
Ford	11	8	54	12	16	...	49	1	8	25	...	...	2	3
Franklin	22	22	41	4	36	3	5	...	5	425	5	4	...	...

Geary.....	8	4	9	3	28	6	20	2	143	2	3	5	2	1	.....
Gove.....	1	1	13	2	5	.....	20	.....	47	.....	.....	.....	3	.....	.....
Graham.....	3	1	23	5	.....	.....	4	37	40	3	.....	1	1	.....	.....
Grant.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	1	1	.....	.....
Gray.....	3	3	6	.....	.....	.....	5	25	8	.....	.....	.....	.....	.....	.....
Greeley.....	.....	.....	4	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....
Greenwood.....	6	6	5	1	9	1	56	56	49	1	5	1	.....	.....	.....
Hamilton.....	.....	.....	5	.....	2	.....	32	.....	19	.....	.....	1	1	1	1
Harper.....	.....	.....	19	.....	3	.....	23	4	6	4	.....	.....	.....	.....	.....
Harvey.....	5	1	2	1	4	.....	55	60	210	.....	18	5	5	.....	.....
Haskell.....	.....	.....	2	.....	.....	.....	.....	.....	19	.....	.....	1	1	.....	.....
Hodgeman.....	.....	.....	3	.....	2	.....	28	1	13	.....	.....	.....	.....	10	.....
Jackson.....	7	4	15	2	.....	.....	16	4	57	1	.....	1	1	.....	.....
Jefferson.....	8	4	10	.....	6	1	44	5	42	.....	.....	.....	.....	.....	.....
Jewell.....	4	3	9	2	.....	.....	25	58	92	.....	4	.....	.....	10	.....
Johnson.....	.....	.....	8	.....	72	.....	59	.....	6	.....	.....	3	.....	.....	.....
Kearny.....	2	2	23	2	1	.....	.....	15	4	.....	45	.....	.....	11	.....
Kingman.....	5	5	15	3	16	1	10	10	32	1	1	13	1	.....	.....
Kiowa.....	.....	.....	2	.....	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Labette.....	10	7	20	1	6	.....	23	10	184	.....	7	1	1	1	1
Lane.....	1	.....	16	.....	19	3	3	2	2	.....	1	.....	.....	.....	.....
Leavenworth.....	7	7	16	3	31	4	15	.....	54	2	.....	.....	.....	.....	.....
Lincoln.....	6	5	4	1	2	.....	6	.....	12	.....	.....	.....	.....	.....	.....
Linn.....	3	3	6	.....	14	.....	15	3	20	.....	7	4	4	.....	.....
Logan.....	3	.....	9	.....	.....	.....	.....	2	6	3	.....	.....	.....	1	.....
Lyon.....	25	14	18	5	32	4	12	19	165	.....	60	.....	.....	3	.....
Marion.....	3	.....	8	.....	7	.....	16	1	1	.....	.....	.....	.....	.....	.....
Marshall.....	15	11	55	3	9	3	59	130	37	1	1	1	1	.....	.....
McPherson.....	1	1	18	3	10	1	22	16	421	1	.....	1	1	.....	.....
Meade.....	4	3	34	3	.....	.....	11	.....	7	.....	2	.....	.....	1	.....
Miami.....	5	4	8	2	16	1	2	6	19	.....	3	1	1	.....	.....
Mitchell.....	7	6	10	3	1	.....	36	.....	71	.....	2	2	2	.....	.....
Montgomery.....	17	9	50	3	25	1	45	237	441	6	46	1	.....	4	3
Morris.....	2	2	8	3	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Morton.....	1	.....	.....	.....	.....	.....	4	.....	4	.....	.....	.....	.....	1	.....
Nemaha.....	6	4	16	4	2	2	27	3	197	.....	1	.....	.....	.....	.....
Nemaha.....	10	7	30	9	9	1	10	43	396	7	33	5	4	6	6
Ness.....	2	1	11	2	.....	.....	57	2	23	.....	.....	.....	.....	.....	.....
Norton.....	.....	.....	22	.....	3	.....	13	66	47	.....	4	.....	.....	.....	.....
Osage.....	72	13	16	5	10	2	61	30	123	.....	3	2	1	.....	.....
Osborne.....	13	.....	22	1	4	.....	27	33	10	.....	6	6	.....	6	.....
Ottawa.....	1	1	32	3	.....	.....	10	.....	1	.....	2	1	1	.....	.....

Cities, First Class:															
Atchison.....	5	4	7	.....	3	1	3	.....	11	.....	35	.....	.....	.....	.....
Coffeyville.....	23	15	37	5	8	3	23	.....	73	.....	44	.....	.....	.....	.....
Fort Scott.....	15	11	26	.....	47	3	3	.....	.....	.....	275	.....	.....	.....	.....
Kansas City.....	107	107	230	54	235	20	258	7	154	.....	1	.....	.....	.....	.....
Leavenworth.....	23	18	143	14	39	1	19	.....	10	.....	169	.....	.....	.....	.....
Parsons.....	18	18	18	2	8	2	6	.....	18	.....	667	.....	.....	.....	.....
Pittsburg.....	15	8	4	2	21	1	32	14	4	.....	33	.....	.....	.....	.....
Topeka.....	40	38	11	11	104	11	80	1	35	.....	565	.....	.....	.....	.....
Wichita.....	37	22	64	20	137	16	39	1	63	.....	450	.....	.....	.....	.....
Totals.....	1,019	715	2,079	326	1,497	153	2,398	118	2,213	14	9,206	111	985	.....	.....

Twelve counties of the state, namely, Clark, Decatur, Edwards, Greeley, Haskell, Hodgeman, Norton, Rawlins, Sheridan, Stanton, Stevens and Wallace, report no deaths from consumption for the two years.

The following is the rate of mortality for 1909 per 100,000 population of the counties reporting, for the following diseases: Pneumonia, 51.5; consumption, 49.8; cancer, 29.6; typhoid, 23.7; diphtheria, 10.8; cholera infantum, 12.7; measles, 2; scarlet fever, 3.2. For 1910: Pneumonia, 61.4; consumption, 51.2; cancer, 45.4; typhoid, 22.9; diphtheria, 11; cholera infantum, 18.7; measles, 5.9; scarlet fever, 5.9.

There were reported during the biennium 1785 deaths due to external violence, of which 227 were suicide. The methods employed in self destruction were as follows: Poison, 104; asphyxia, 1; hanging or strangulation, 20; drowning, 11; firearms, 48; cutting instruments, 6; crushing, 2; other methods, 35.

The number of deaths by railroad accidents and other vehicles, such as automobiles and horse and vehicles, have increased the number, being 288 for the biennium as against 230 in the last biennium. The reports would seem to indicate that the increase was due chiefly to the increase of automobile accidents.

The fatal mining accidents for 1909 were 41, and for 1910 23, a total of 64, being 15 less than for the same period of the last biennium.

In 1909 ages were reported in 11,746 deaths, out of a total of 13,485; and in 1910 ages of 11,048 were reported out of a total of 14,638 deaths. Of these 3642 were deaths under one year of age; the rate progressively grows smaller until between the period of ten and fifteen years of age, at which period there are reported but 562 deaths; from this year on the rate progressively increases until between the ages of seventy and eighty years of age, at which age 2347 died during the biennium. It is noted that in 1909 eight people lived to be over 100 years of age, and in 1910 nine people lived to be over 100 years of age, and in this year one death was reported at an age in excess of 110 years.

The death rate per 1000 population for 1909 was 8, and for 1910 was 8.7.

FOOD AND DRUGS LAW.

I am pleased to report that the condition of places where food and drugs are manufactured or sold in this state has greatly improved since the last biennium, in both the quality of the goods offered for sale and in the sanitary condition of places and things. Generally speaking, there is a cordial coöperation between manufacturers, jobbers and dealers and the department in the observance of the law. This accounts for the relatively few prosecutions that the department has brought for violation of the law. When it is remembered that more than 10,000 places are under inspection the list of prosecutions which are herewith appended covering the biennium is exceedingly small, the total number being 251.

LIST OF PROSECUTIONS BROUGHT UNDER THE FOOD AND DRUGS LAW.

	<i>Fine.</i>	<i>Costs.</i>
Townsend Drug Company, Abilene.....	\$13 50	
H. L. Burke, Allen.....	100 00 and costs.	
B. F. Orr, insanitary meat market.....	25 00 and \$10 15	
Roger's Drug Store, Arlington.....	10 00 and costs.	
John H. Brown & Co., Atchison, substandard vinegar	5 00 and	12 50
O. N. Burke & C. N. Atchinson, Gardner, insanitary restaurant	2 50 and	8 75
O'Brien Pharmacy, Beloit, adulterated drugs, paid fine and costs.....	minimum and costs.	
Chas. Kottal, Bison.....	5 00 and costs.	
R. L. Bailey, Burden.....	1 00 and costs.	
Fred A. Brechet, Burns, substandard tincture iodine,	5 00 and costs.	
J. H. Donecker, Bunker Hill, substandard vinegar,	5 00 and costs.	
H. E. Cowgill, Burlington, adulterated drugs.....	5 00 and costs.	
Dr. Hubert Fannon, Bucklin, adulterated drugs....	10 00 and costs.	
C. L. Stocks, Bushong, substandard drugs.....	5 00 and costs.	
D. C. Everson, Cawker City, adulterated drugs, paid fine and costs.....	minimum and costs.	
G. A. Watkins, Cherryvale, exposing fish.....	1 00 and costs.	
C. W. Wilbur, Cherryvale, misbranding catsup....	1 00 and costs.	
Johnson Bros. & Co., Cleburne.....	10 00 and	8 25
Forsberger & Co., Cleburne.....	10 00 and	8 25
T. E. Brandon, Clyde, substandard drug product, paid fine and costs.....	minimum and costs.	
John Combs, Carona, killing lumpy-jaw steer.....	50 00 and costs.	
Bechner & Hunt, Conway Springs, insanitary slaughter house, each.....	5 00 and costs.	
A. L. Pullins, Council Grove, insanitary slaughter house	20 00 and	5 75
W. B. Kriste, Deerfield.....	25 00 and costs.	
T. H. Traynor, Dodge City, insanitary restaurant..	20 00 and costs.	
T. H. Traynor, Dodge City, dirty restaurant.....	20 00 and	5 00
J. M. Bell, Mgr., Dodge City.....	20 00 and costs.	
H. R. Brown, Dodge City.....	20 00 and costs.	
Carlos Fay, Dodge City.....	1 00 and costs.	
Forline & Utt, Downs, adulterated drugs, two counts	30 00 and costs.	
John Hetzer, Drywood, insanitary store.....	5 00 and	5 00
Red Cross Pharmacy, Edgerton, substandard tincture iodine	1 00 and costs.	
Kniseley & Hicks, El Dorado.....	25 00 and	7 75
Baker & Son, Ellsworth.....	25 00 and	6 25
Cizek, Ellsworth, insanitary slaughter house.....	5 00 and	6 40
C. H. Martin, Emporia, illegal sidewalk display....	5 00 and	1 75
R. D. Crawford, Emporia, insanitary bakeshop....	5 00 and costs.	
D. W. Hainer, Emporia.....	50 00 and	6 00
John Henning, Emporia, insanitary slaughter house	5 00 and costs.	
F. C. Sullivan, Emporia, insanitary slaughter house,	5 00 and	1 75
C. Rasmusen, Emporia, illegal display.....	fine and	7 75
C. Rasmusen, Emporia, insanitary place of business	5 00 and costs.	
Rural Ice Cream Company, Emporia, substandard ice cream	5 00 and costs.	
Damerell & Sons, Erie, fined.		
E. N. Bailey & Co., Eureka, substandard tincture iodine	fine and	6 20
H. Garland, Fredonia.....	2 00 and	3 00

	<i>Fine.</i>	<i>Costs.</i>
Franz Bachman, Fort Scott, illegal ice cream.....	\$1 00 and	\$7 50
W. E. Ditch, Galva, substandard ice cream.....	25 00 and	10 15
J. M. Craig, Garnett, adulterated drugs.....	minimum and	costs.
J. R. Roberts, Garnett, insanitary slaughter house,	7 50 and	2 50
N. Roe and F. Swearingen, Garnett, insanitary		
slaughter house	7 50 and	2 50
Birt Neet, Girard, substandard milk.....	1 00 and	costs.
J. W. Sutton, Glasco, insanitary meat market.....	25 00 and	costs.
Clark, Grainfield	25 00 and	costs.
Legleiter, Grainfield	25 00 and	costs.
Geo. A. Duncan, Great Bend.....	5 00 and	6 00
C. D. Spaugh, Great Bend, illegal sidewalk display,	5 00 and	5 50
G. W. & Theodore Sams, Great Bend.....	5 00 and	6 00
L. Petz & E. Petz, Great Bend.....	10 00 and	6 00
A. C. Ayres, Greenleaf.....	10 00 and	costs.
Harpster's Pharmacy, Hepler, adulterated drugs..	minimum and	costs.
Hoisington Creamery Co., Hoisington, substandard		
ice cream	25 00 and	costs.
Grant Ernst, Humboldt, selling diseased meat.....	minimum and	costs.
L. W. Bell, Hutchinson.....	5 00	
J. W. Bixler, Hutchinson.....	10 00	
C. E. Blake, Hutchinson.....	5 00 and	costs.
C. S. Winchester, Hutchinson.....	5 00 and	13 90
A. Lyons of Lyons Bros., Hutchinson, dirty store..	5 00 and	12 90
Joseph Cheskey, Hutchinson.....	4 00	
D. A. Crispi, Hutchinson.....	10 00 and	costs.
Steffens-Bretch Ice and Ice Cream Co., Hutchinson,		
substandard ice cream.....	5 00 and	costs.
W. A. Prentice, Hutchinson.....	minimum and	costs.
Dr. J. S. Allen, Hutchinson.....	10 00 and	costs.
Herman Colson, Ionia, substandard essence pepper-		
mint	1 00 and	costs.
J. A. Florner, Junction City, substandard ice cream,	fine and	9 10
B. D. Hunter, Jetmore.....	5 00 and	costs.
J. V. Humphrey, Junction City.....	5 00 and	costs.
J. L. Johns, Junction City, substandard ice cream..	fine and	9 10
B. Murry, Junction City.....	5 00 and	costs.
J. W. Shellhaas, Junction City, substandard ice		
cream	5 00 and	18 15
Scott Brothers, Independence, wormy peaches, mini-		
mum and costs.		
American Butter Co., Kansas City, Mo.....	5 00 and	costs.
E. W. Jennings (Armour Pkg. Co.), Kansas City,		
uncovered meats	10 00 and	7 45
H. L. Armentrout, Kansas City, adulterated milk..	5 00 and	4 00
P. J. Broll, Kansas City, adulterated milk.....	5 00 and	4 00
J. R. Collins, Kansas City, adulterated milk.....	5 00 and	4 00
M. Rosenblume, Kansas City, adulterated milk....	5 00 and	4 00
Interstate Dairy Co., Kansas City, adulterated milk,	5 00 and	4 00
W. H. McHale & Co., Kansas City, adulterated milk,	5 00 and	4 00
North End Dairy Co., Kansas City, adulterated milk,	5 00 and	4 00
J. Spector, Kansas City, adulterated milk.....	5 00 and	4 00
J. H. Henry, Manager North End Dairy Co., Kan-		
sas City, adulterated milk.....	5 00 and	4 00
B. Markowitz, Kansas City, adulterated milk.....	5 00 and	4 00
W. Waldner, Kansas City, adulterated milk.....	5 00 and	4 00
St. Louis Dairy Co., Kansas City, adulterated milk,	5 00 and	4 00
Pete Nessleship, Kansas City, adulterated milk....	5 00 and	4 00
L. Segleborn, Kansas City, dirty milk.....	5 00 and	4 00
St. Louis Dairy Company, Kansas City, substan-		
dard milk	5 00 and	costs.

	<i>Fine.</i>	<i>Costs.</i>
M. Schanker, Kansas City, dirty milk.....	\$5 00	and \$4 00
J. F. Casey (Swift Pkg. Co.), Kansas City.....	10 00	and 7 45
John Simpson, Kansas City.....	5 00	and costs.
C. F. Smith, Kansas City, illegal sidewalk display,	5 00	and costs.
T. Thorp, Kansas City, including costs.....	13 60	
Thompson & Brown Lard Co., Kansas City, illegal		
meat	5 00	and 3 00
Tony Toneff Bakery, Kansas City, insanitary bake-		
shop	50 00	and costs.
L. Uzelac & V. Kalimch Gro. Co., Kansas City, in-		
sanitary lard	50 00	and costs.
North End Dairy, Kansas City, substandard ice		
cream	minimum	and costs.
S. F. Wolf, bakery, Kansas City, substandard ice		
cream	minimum	and costs.
Rayburn Brothers, Kansas City, substandard ice		
cream	minimum	and costs.
Pete Koclanes, Kansas City, substandard ice cream,		
St. Louis Dairy Co., Kansas City, substandard ice		
cream	minimum	and costs.
Pete Koclanes, Kansas City, low in butter fat.....	5 00	and costs.
Christ Kopp, Kansas City.....	5 00	and costs.
G. Kolsogakis & J. Kolovas, Kansas City, insani-		
tary bakery	50 00	and costs.
H. W. Kerr Dairy Co., Kansas City, dirty milk....	10 00	and costs.
Warren Morris, Kansas City.....	5 00	and costs.
James Murray, Kansas City.....	5 00	and costs.
Pete Koclanes, Kansas City, insanitary candy		
store	5 00	and costs.
F. King, Agt. Morris Pkg. Co., Kansas City.....	10 00	and 7 45
J. W. Murphy, Hutchinson.....	25 00	and 51 00
Eagle Bottling Works, Kansas City, Mo., saccharine		
in pop	25 00	and costs.
Inter-city Dairy Co., Kansas City, dirty milk.....	5 00	and costs.
Frank Brown, Kansas City.....	5 00	and costs.
Clarence Higgs (Cudahy Pkg. Co.), Kansas City...	10 00	and 7 45
W. H. Campbell (C. C. Yost Pie Co.), Kansas City,		
insanitary	5 00	and costs.
E. Pearson, Kansas City, fine including costs.....	13 60	
Philip Pleatsekas and Jim Pappantonis, Kansas		
City, insanitary bakeshop.....	50 00	and costs.
A. K. Potter, Kansas City, for having car cabbage		
on side road.....	5 00	and 3 00
W. E. & G. F. Peake Bros., Kansas City, insanitary		
store	5 00	and 4 00
Periclis Ziogas & Geo. Kostas, Kansas City, insani-		
tary store	50 00	and costs.
John Neschold, Kansas City.....	5 00	and costs.
North End Dairy, Kansas City, adulterated milk..	5 00	and costs.
Myers Sanitary Milk Co., Kansas City, short-weight		
butter	5 00	and costs.
Meriden Creamery Co., Kansas City, short-weight		
butter	5 00	and costs.
Robert Curran, Kansas City, dirty milk.....	5 00	and costs.
J. H. Clayborne, Kansas City.....	5 00	and costs.
Champagne Cider Works Co., Kansas City, saccha-		
rine in pop.....	25 00	and costs.
DeCoursey Pure Milk Co., Kansas City, dirty milk,	10 00	and 8 00
DeCoursey Pure Milk Co., Kansas City, formalde-		
hyde in milk.....	5 00	and costs.

	<i>Fine.</i>	<i>Costs.</i>
DeCoursey Pure Milk Co., Kansas City, substandard milk	\$5 00	and costs.
Fowler Packing Co., Kansas City, uncovered meats,	25 00	and costs.
Eagle Bottling Works, Kansas City, saccharine in pop	25 00	and costs.
Wolf Confectionery and Bakery, Kansas City, substandard goods	5 00	and costs.
Albert & Leo Wiese, Kansas City.....	25 00	and 4 00
Fred Waudel Dairy Co., Kansas City, for keeping cows and allowing them to drink filthy water..	10 00	and 8 00
A. Waldner Milk Co., Kansas City, dirty milk.....	10 00	and 8 00
Jacob Ross, Kansas City.....	5 00	and costs.
J. T. Royane, Kansas City, illegal sidewalk display,	5 00	and 3 00
R. A. Robinson, Kansas City.....	5 00	and costs.
Rayburn Bros., Kansas City, adulterated milk.....	5 00	and costs.
Harvey Reitz, Kansas City, selling impure food, (committed to county jail until paid in full)...	1 00	and 7 70
Reitz & Reitz, Kansas City, lard mixture, fine and costs.		
S. E. Cogswell, Kirwin, adulterated drugs.....	10 00	and costs.
W. B. Kreite, Lakin.....	25 00	and 7 25
William Stansbury, Lakin.....	25 00	and 7 25
Wm. Holzapfel, Larned.....	25 00	and costs.
Tom Hill, Larned.....	10 00	and 2 00
Wm. Holzapfel, Larned, conviction and fine.		
S. E. Burgess, Larned, illegal ice cream.....	25 00	and costs.
H. Niederee, Larned, insanitary slaughter house...	5 00	and 5 90
J. R. Renick, Larned, illegal ice cream.....	25 00	and costs.
W. L. Rochat, Larned, illegal ice cream.....	25 00	and costs.
W. H. Avery, Larned, insanitary grocery store....	5 00	and 5 50
L. F. Ainsworthy, Larned, insanitary grocery store,	5 00	and 5 50
John Fritz, Lawrence, watered milk.....	25 00	and costs.
H. S. & J. S. Schleifer, Lawrence.....	10 00	
Louis Rocklund, Lawrence, insanitary restaurant..	1 00	and costs.
Henry C. Gerhard, Lawrence, uncovered bakery products	1 00	and 5 00
Harry Weymiller, Lawrence, insanitary restaurant,	1 00	and 5 00
Henry Ochs, Leavenworth.....	50 00	and 23 50
Fred Schroeder, Leavenworth, adulterated drugs..	minimum	and costs.
Shelly A. Fields, Liberal, feeding hogs filthy material	10 00	and 1 75
Dr. Robt. Algie, Linn, adulterated drugs.....	1 00	and costs.
W. W. Kirby & R. Lacky, McPherson, imitation honey	20 00	and costs.
L. G. Tate, McPherson, substandard ice cream....	25 00	and 10 15
Demain & Powers, Macksville.....	10 00	and costs.
L. A. Hamner, Macksville, dirty store and slaughter house	5 00	and 6 10
Shultz Bros., Manhattan, sulphites in hamburg steak	100 00	and costs.
Fleming Pharmacy, Miltonvale, substandard drugs, paid	fine	and costs.
J. I. Sheets, Mound City, adulterated drugs.....	1 00	
Mr. McIntyre, Olathe, misbranded catsup.....	50 00	and 7 25
Louis Berges, Onaga, adulterated drugs.....	5 00	and costs.
Louis Baehr, jr., Paola.....	5 00	and 2 50
H. S. Rossman, Paola.....	5 00	and 2 50
Otto Peuker, Paola.....	5 00	and 2 50
J. L. Ruble, Parker.....	10 00	and costs.
Mill and Elevator Co., Phillipsburg.....	25 00	and costs.
Garriott, Pittsburg	5 00	and 9 25

	<i>Fine.</i>	<i>Costs.</i>
M. S. Forbes, Pittsburg.....	\$5 00 and	\$7 25
Mould & Son, Pittsburg, illegal sidewalk display..	10 00 and	costs.
W. H. Payton, Pittsburg, illegal sidewalk display..	10 00 and	2 00
United Drug Co., Pleasanton, misbranded drugs, two counts	1 00 and	costs.
United Drug Co., Pleasanton, misbranded tablets, two counts	1 00 and	costs.
D. McIntyre, Prairie Center, adulterated vinegar..	50 00 and	costs.
J. D. Peoples, Rosedale, adulterated drugs.....	10 00 and	costs.
Clyde Leavengood, Rosedale, adulterated drugs....	minimum and	costs.
R. W. Garrett, Russell, defendant forfeited bond, \$50. by nonappearance.		
Frank Lawrence, Salina.....	minimum and	costs.
Quinn & Young, Salina.....	minimum and	costs.
J. H. Shirt (Hammond Pkg. Co.), St. Joe, Mo., un- covered meats	10 00 and	17 45
W. L. Curtis, Seward, insanitary meat market and store	5 00 and	costs.
J. C. Pugh, Sharon Springs.....	10 00 and	costs.
R. I. Bilby, Sharon Springs.....	20 00 and	costs.
Mr. Bailey, Spring Hill, illegal iodine potassium...	1 00 and	costs.
Lott & Hawkins, Sterling.....	minimum and	costs.
J. B. Anderson, Syracuse, insanitary restaurant...	.....	costs.
P. E. Herndon, Syracuse, insanitary store.....		5 75
Harry Whittelsey, Topeka, uncovered products....	5 00 and	costs.
T. W. Thompson, Santa Fe Hotel, Topeka.....	50 00 and	28 00
Oscar C. Goenour, Topeka, filthy, wormy candy....	25 00 and	11 00
Baughman Bros., Topeka, substandard ice cream..	25 00 and	15 00
Geo. W. Jenkins, Wamego, substandard ice cream..	25 00 and	costs.
E. A. Winter, Webber, adulterated drugs.....	1 00 and	costs.
Mrs. J. J. Stevens, Wellington, decomposed eggs...	5 00 and	5 00
N. Gershon, Louis Gershon, Abe Gershon, Wichita, illegal sidewalk display.....	5 00 and	4 50
E. Gerson, Wichita, illegal sidewalk display.....	5 00 and	costs.
W. O. Goodwin, Wichita, obstructing inspection....	10 00 and	costs.
W. C. Ward, Wichita, insanitary bakery.....	1 00 and	5 60
L. R. Wentz, Wichita, insanitary place of business,	5 00 and	5 45
A. J. Wright, Wichita, insanitary grocery stock....	10 00 and	5 45
Albert Huber and Jesse Huber, Wichita, illegal dis- play, each	1 50 and	5 95
Geo. Finch, Wichita, illegal sidewalk display.....	5 00 and	4 50
C. H. Van Anchan, Wichita, illegal sidewalk display,	1 00 and	5 60
J. Burshten, Wichita, illegal sidewalk display.....	5 00 and	4 50
A. Bursher, Wichita, uncovered fruits.....	10 00 and	5 45
M. Paulin, Wichita, illegal display.....	10 00 and	5 45
Noggle, Windom, substandard ice cream.....	25 00 and	10 15
Joe Mitchler, Winfield, insanitary meat cellar.....		9 00
Grube & Glenn, Wyandotte county.....	10 00 and	costs.

The legislature of 1909 passed what is known as the weights and measures law, which requires net weights to be given in articles bought and sold in this state. The following prosecutions have been brought under the weights and measures law:

PROSECUTIONS BROUGHT UNDER THE WEIGHTS AND MEASURES LAW.

	<i>Fine.</i>	<i>Costs.</i>
Baker & Wallerstedt, Abilene, bread not labeled....	\$5 00 and	\$8 50
Belknap & Roemer, Abilene, unmarked berry boxes,	5 00 and	7 00
L. L. Merrifield, Abilene, unmarked berry boxes....	5 00 and	6 25
C. C. Schively, Abilene, unmarked berry boxes and illegal display	10 00 and	12 50

	<i>Fine.</i>	<i>Costs.</i>
J. K. Markley, Abilene, unmarked berry boxes.....	\$5 00 and	\$6 25
J. T. Prendergast, Abilene, unmarked berry boxes..	5 00 and	6 25
Deer Creek Creamery, Atchison, short weight butter,	20 00	
J. H. Durst, Atchison, false scales.....	5 00 and	4 95
Crystal Ice Company, Atchison, false scales.....	25 00 and	costs.
House Ice Company, Atchison, fake sales.....	25 00 and	costs.
E. B. Hughes, Beloit, incorrect scales.....	10 00 and	costs.
Hugo F. Ahler, Chanute, violation weights and meas- ures law	25 00 and	6 85
C. T. Woods, Coffeyville, short weight potatoes.....	5 00 and	6 55
D. D. Hocket, Delphos, short weight scales	15 00 and	costs.
W. D. Jones, Delphos, short weight scales.....	15 00 and	costs.
F. Borenschein, Ellsworth, mislabeled	7 50 and	costs.
A. A. Bisbee, Ellsworth, mislabeled bread.....	7 50 and	costs.
Stanley Myers, Fort Scott, short weight butter.....	1 00 and	costs.
Marion Brown, Iola, short weight apples.....	5 00 and	5 00
Floyd Elliott, Iola, short weight apples.....	5 00 and	1 50
Samuel Stewart, Kansas City, case made against Meyer Sanitary Milk Co., Kansas City, short weight butter	5 00 and	costs.
John Seitz, Kansas City, case made against Meriden Creamery Co., Kansas City, short weight butter,	5 00 and	costs.
Dave Daccopp, Kansas City, short measure.....	5 00 and	costs.
Standard Baking Co., Kansas City, bread not legally labeled	5 00 and	3 00
Murray Bread Company, Kansas City, not legally labeled	5 00 and	3 00
Mathaeis Bread Co., Kansas City, bread not legally labeled	5 00 and	3 00
Kansas Baking Company, Kansas City, short weight,	10 00 and	8 00
W. A. Griswold, Kansas City, case made against the Continental Creamery Co., Topeka, short weight butter	5 00 and	costs.
Smith Steam Baking Co., Kansas City, short weight bread	5 00 and	4 00
Warren Morris, Driver, Kansas City, short weight bread	5 00 and	4 00
E. J. Burton, Kansas City, short peck measure.....	5 00 and	costs.
Schumacher and Ketter Grocery Co., Kelly, short weight scales, including costs	40 00	
Kensington Mill Company, Kensington, misbranding,	50 00 and	costs.
McCune & Johnson, Kinsley, short weights, six cases,	5 00 and	costs.
G. A. Spaulding, Lawrence, berry boxes.....	5 00 and	5 00
Stanford & Ewing, Lawrence, berry boxes.....	5 00 and	5 00
John Hunziker, Lawrence, short weight bread.....	5 00 and	4 00
Wm. Bales, Lawrence, berry boxes not labeled.....	5 00 and	5 00
Robert Beattie & S. L. Haid, Manhattan, two counts, fined	minimum and	costs.
E. B. Purcell Trading Co., Manhattan, two counts, fined	minimum and	costs.
Manhattan Wholesale Grocery Company, Manhattan,	15 00 and	costs.
Chester Ice Company, Phillipsburg, incorrect scales,	10 00 and	9 55
A. W. Chester, Phillipsburg, false scales.....	10 00 and	costs.
Dunn & Sons, Phillipsburg, incorrect scales.....	5 00 and	9 55
Dunn & Sons, Phillipsburg, false scales.....	10 00 and	costs.
Phillipsburg Mill & Elevator Co., Phillipsburg, short weight meal	25 00 and	9 35
J. R. Jardine, Parsons, violating weights and meas- ures law	5 00 and	5 00
Mr. Levi Parsons, berry boxes short.....	.....	costs.

	<i>Fine.</i>	<i>Costs.</i>
Crawford County Creamery, Pittsburg, short weight butter	\$25 00 and	\$8 25
Belle Springs Creamery Company, Salina, fifteen counts (appealed)	1500 00 and	costs.
Otto Kelm Bakery, Seneca, short weight bread, including costs	10 50	
John Meinberg Baking Company, Seneca, short weight bread, including costs.....	10 50	
Butterworth & White Mill and Elevator Company, Severance	25 00 and	costs.
Kemper Mill & Elevator Co., Tonganoxie, misbranded and short weight flour.....	25 00 and	costs.
W. H. Brooks, Topeka, false balances, two counts, each	5 00 and	costs.
Addison Mill & Elevator Co., Wathena, short weight flour	25 00 and	costs.
Lynds Mill & Elevator Company, White Cloud, short weight	50 00 and	costs.
A. C. Hunter, Wichita, using liquid quart in cranberries	5 00 and	5 45
F. B. Bissantz, Wichita, bread not labeled.....	5 00 and	4 50
E. T. Wolf, Wichita, bread not labeled.....	5 00 and	4 50
Winfield Ice Cream Co., Winfield, short weight butter	10 00 and	13 25
W. S. Kininmouth and James Oaks, Winfield, short weight butter, each.....	5 00 and	20 00

The food and drug inspectors of this department have been inspecting scales, weights and measures, under the provisions of the weights and measures law, and have found an unusual and unsuspected condition in the weights, scales and measures of this state. No less than 325 avoirdupois scales have been condemned, and literally hundreds of avoirdupois weights have been condemned, being either above or below the tolerance allowed under the rules and regulations of the state sealer.

In a trial test of the large wagon scales of ten representative cities of the state, out of 149 scales inspected 35 per cent were condemned as being without the limit of tolerance allowed in the regulations, which is ten pounds to the ton. If this ratio obtains throughout the state it discloses a very serious condition of affairs. I have to report, however, that it is impossible for this department to undertake the inspection of large wagon scales on account of the lack of inspectors and necessary appropriation to do the work. .

HOTEL INSPECTION.

The hotel inspection law has been effective but a little more than a year, in this biennium, but during that year great improvement has been made in the sanitary conditions of hotels and rooming houses, and in the provision of adequate means of escape during fire. A score or more of hotels and rooming houses have been closed, they having failed to comply with the law, the choice being given them of closing their doors or having complaint filed in the courts. The following cases have been filed in the courts, in which prosecutions have been made:

LIST OF HOTEL PROSECUTIONS.

Charles McDaniel, Clyde, no fire escapes.....	\$100 00 and costs.
J. F. O'Neal, Dodge City, unsanitary.....	10 00 and 5 00
John Bachus, Hillsboro, unsanitary hotel.....	5 00 and costs.
William Briggs and wife, Wa Keeney, unsanitary, fined each	5 00 and costs.

WATER AND SEWAGE LAW.

The wisdom of the legislature in passing the water and sewage law has been demonstrated more than a score of times during the past biennium, in which the department was enabled to demand and secure a wholesome water supply for many municipalities, and through which, also, the purity of the waters of the state have been safeguarded.

During the biennium nineteen applications for the installation or extension of public water supplies have been granted, and thirty-three applications for the installation of sewerage systems have been granted. Of the latter number fourteen cities were required to purify the sewage before being discharged into the waters of the state. It is the settled policy of the department to require purification of sewage from all new installations of sewerage systems that discharge their sewage into any of the waters of the state that are used as a source of domestic supply by any other city. The time will come when every city in the state will be required to purify their domestic sewage and industrial wastes before being permitted to discharge the same into the natural waters of the state.

IN GENERAL.

During the past biennium the department has established and antitoxin division for the free distribution of diphtheritic antitoxin to the indigent of the state. It is the policy of the department to enlarge its usefulness in this direction by putting in other antitoxins, serums and bacterins for distribution over the state; and plans are under way providing for antirabic treatment to those unfortunates who are unable to provide the expensive Pasteur treatment.

The vital statistics law, which was passed by the legislature of 1911, will, when it is put into operation, be a mighty instrument in the hands of the department in the control of preventable diseases; for, with exact and definite data as to the time, place and cause of death, the department will be enabled to set into operation such measures of prevention in prevent-

able diseases as will safeguard the public health in communities that are threatened by such diseases. The law requiring the compulsory reporting of tuberculosis has not thus far been a success; but with the ability to locate all deaths from tuberculosis, through the operation of the standard registration law, it is believed that the department will be enabled to effectively enforce the tuberculosis notification law.

The annual inspection of the state charitable, reformatory and educational institutions has been made annually, and it is noted that the sanitary conditions have been considerably improved since the last biennium. This is particularly true in the case of the state reformatory institutions.

For account of the detailed work of the department during the past two years your attention is respectfully invited to the reports of the secretary found in another part of this report.

Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

QUARTERLY REPORT.

March 30 and 31, 1909.

Mr. President and Members of the Board:

GENTLEMEN—The principal matter of importance that has occurred since our last meeting in December is that of legislation secured for this department, the most important of which is for the purpose of tuberculosis control in this state.

At the outset I desire to say in this public way that this Board and the people of the state owe a debt of gratitude to two of the distinguished members of the Board, who were also members of the senate, Senators Milligan and Huffman, through whose efforts such valuable legislation has been placed on the statute books.

Four bills were passed into statutory law which are calculated to place in the hands of the state officials powerful weapons in the crusade against tuberculosis:

First, senate bill No. 209, requiring confidential reports from physicians of all cases of tuberculosis, within twenty-four hours, to their respective county health officers, this information in turn to be placed on file in this office. The bill provides for fumigation of places and things upon the termination of the case, at public expense, and for certain supplies and pamphlets on prevention, to be distributed to each case by the attending physician or health officer. With the definite location of infected places, intelligent supervision may be instituted, and thus the public health safeguarded.

Second, is a law looking towards the eradication of tuberculosis in cattle, which law is placed under the jurisdiction of the sanitary live-

stock commissioner and the state veterinarian. This is a mighty step forward in tuberculosis control, as there no longer seems any question as to the transmissibility of the bovine bacillus to the human.

The third law is known as the antispitting law, which, while much more difficult to enforce, will no doubt have a beneficial influence in prohibiting promiscuous expectoration on the floors of cars, public buildings and sidewalks.

The fourth provision is an appropriation of \$20,000 for two years for the purpose of carrying on a state-wide educational campaign for the suppression and prevention of tuberculosis. This provision, after having been killed in the house, was finally resurrected at the last minute of the eleventh hour, and thus the Board given the ways and means for entering into an aggressive campaign against this great scourge.

The other measures that affect this department are as follows: An amendment to the water and sewage law, giving the Board jurisdiction over the operation of all water plants and sewerage systems within the state, regardless of their time of construction, authorizing the Board to make investigations concerning the pollution of streams from industrial wastes, providing for an engineer, and strengthening the old water and sewage law in several other important particulars.

The food and drugs law was amended and strengthened, section 3 especially needing such amendment, and section 11, providing for additional inspectors and an assistant to the chief inspector. It is my candid opinion that the state of Kansas now has the most comprehensive, just, workable and effective water and sewage law and food and drugs law upon the statute books of any state in the Union.

A companion bill to the food and drugs law was passed, authorizing the Board to make sanitary rules and regulations in food and drug inspection, and thus our sanitary regulations abolishing sidewalk displays and requiring places and things where foods and drugs are prepared, stored, sold or offered for sale to be in a sanitary condition will have a firm basis of statutory law to rest upon.

Senate bill No. 134, known as the weights and measures law, repealed the old conglomerated mass of acts that have been passed from time to time covering weights and measures, many of which were unworkable, if not unconstitutional. It is believed that this new law will be the means of saving a vast sum of money to the consumers of this state if it can be properly enforced. This department will make an attempt to enforce those provisions only which apply to food and drug inspection, as the number of our inspectors is entirely inadequate to go outside of that domain.

Section 8 of chapter 129 of the general health laws was amended, requiring county health officers to take the oath of office upon assuming their duties, and giving the State Board of Health the power of removal upon their refusal or neglect to perform the duties prescribed by law, or the regulations or requirements of the Board. It is altogether likely that the Board will have the opportunity of testing the validity of this act before the year is out.

House bill No. 124, known as the hotel inspection law, adds enor-

mously to the burdens of this department, in that the department is charged with the enforcement of the law. With our small inspection force it will be utterly impossible for our inspectors to make the inspections required within a reasonable length of time. Thus we will have to look to county health officers and fire marshals to make these inspections under rules to be established by the Board.

House bill No. 546 makes it a misdemeanor either to buy or sell a diseased animal whose flesh is to be used for human consumption.

Senate bill No. 360 provides that the State Board of Health shall have sanitary supervision over all barber shops, barber schools, public bath houses and public bath rooms, and shall inspect, or cause to be inspected, the places enumerated in the act. They shall make and publish certain rules and regulations for carrying out the provisions of the act.

The total appropriations for the Board were largely increased, the amount for the coming biennium being \$90,000, as compared with \$41,000 for the last biennium. Thus it will be seen that the department of health has fared very generously at the hands of the legislature of 1909.

Under the head of miscellaneous business, I desire to present to the Board the matter of making the rules and regulations required under these several laws, and to have the Board's instruction relative to the inauguration of the state-wide educational campaign for the prevention and suppression of tuberculosis.

On December 17 the United States district court assessed a fine of \$100 and costs against the Heim Brewing Company under the national food and drugs law, in an action brought by your secretary for misbranding of beer, and thus was brought to a successful conclusion the second case in this state under the national food and drugs act.

Permits to the following cities for new or extended water supplies have been granted since the last meeting of the Board:

Augusta, Emporia, Havensville, Moundridge and Topeka.

Permits have been granted to the following cities for the extension of sewer systems:

Hiawatha, Marion, Washington and Wellington.

A permit was granted by the commission composed of the governor, the attorney-general and the secretary of the Board, to the city of Minneapolis to discharge untreated sewage into the natural waters of the state for a period of two years.

There have been no visits by the secretary to points in the state that are of interest, owing to the fact that the duties of the office are such as to make it well nigh impossible to leave. It is hoped that with the assistance which the amended food and drugs law provides, more time may be had for administrative detail and sanitary investigations under the water and sewage law, as well as original research in conjunction with the sanitary engineer.

On February 21st the following letter was addressed to the general managers of all the railroads doing business in this state, which letter is self-explanatory :

"DEAR SIR—Repeated investigations by independent investigators have seemed to prove beyond a reasonable doubt that one of the most frequent or potent sources for the dissemination of infectious diseases is by the common drinking cup. It is necessarily so when we know, for example, that the use of a cup or glass by a consumptive in an advanced stage of the disease makes it extremely dangerous for any one else to use the same cup or glass, before it has been thoroughly sterilized. There is always left on the edge of such vessel more or less of the moisture or saliva of the mouth which is likely to be transferred to the next person using the glass, and thus such person may have an implantation of fresh and virulent germs into the mouth or intestinal tract.

"A careful physician always instructs the relatives and friends of a consumptive not under any circumstances to use the same utensils the patient uses, and sanitarians are emphatic in their assertions that the very fundamentals of prevention rest on this proposition.

"If it is true, then, that the use of a drinking cup in common *in the home*, which was used by a consumptive, would endanger the life of the other members of the family, it would be equally true outside the home, and the traveling public be greatly endangered by the use of the common drinking cup. Moreover, there are a number of other very dangerous infectious diseases that may be transmitted in the same way, namely, diphtheria, syphilis, typhoid fever and pneumonia, which cases are found on our trains not infrequently, mostly of the ambulatory or walking type, but all of which are capable of infecting others through the medium of the common drinking cup.

"Our geographical position is such that the great trunk lines of railways going to the west and southwest, the Mecca for the consumptive, necessarily cross our state, and thus it is probable that every through train carries one or more of the thousands of these unfortunates that each year are seeking a favorable climate. It seems, therefore, that the discussion concerning whether there is any real danger in the use of the common drinking cup is no longer an academic one, but a real live sanitary issue, in which there is a universal opinion that its use is the most vicious and fruitful source for the spread of dangerous infectious diseases that is permitted to exist to-day.

"With these prefatory remarks, I desire to submit two questions, and respectfully request an early reply:

"First. Will your company abolish the use of the common drinking cup in Kansas, if the State Board of Health issues an order to that effect?

"Second. Will you post a suitable notice in your stations in Kansas advising the public of such action and the reason therefor, in order that the people may be advised of the danger of the common drinking cup and that they may prepare themselves with individual cups for their journey?

"I might add that the news agent, station agent, or both, might supply the public with these cheap paraffin paper cups at a small cost, which

would last during the length of the average journey. I might also say that in a short time, at least, the traveling public will take kindly to this arrangement, as the state-wide educational campaign which it is proposed to inaugurate during the next two years by the State Board of Health, looking towards the control and suppression of tuberculosis, will do much towards eliminating any source of complaint; besides, it is a matter of observation that a considerable portion of the passengers these days have supplied themselves with individual drinking cups. A similar letter has been transmitted to all the railroads operating in this state.

"Very truly yours,

S. J. CRUMBINE, *Secretary.*"

Several replies that have thus far been received indicate a willingness on the part of the railroad companies to coöperate with the department in the matter of abolishing the common drinking cup. General Manager Hurley's response is herewith submitted as an example of the attitude of that railroad and others:

"TOPEKA, March 1, 1909.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR DOCTOR—I am acknowledging receipt of your letter of February 14th, relative to drinking cups on passenger trains. I shall be quite willing to abolish the use of all drinking cups on all local trains in the state if the State Board of Health will issue an order to that effect, and post notices in our stations and on our equipment of the reason for this action, so that they may have their individual cups. Of course it is just as important to have the same regulations or practice on through trains, and I shall be willing to make the same rule on through trains if other lines will agree thereto. I am communicating with the general managers of the other railroads in the state, suggesting that this be done, and I would also respectfully suggest that you endeavor to have the state boards of health of other states take like action. I am quite willing to make any arrangement that is practicable to prevent the spread of infectious or contagious diseases through the traveling public on our trains.

"Of course I shall do nothing about this until the State Board of Health issues an order as suggested.

"Yours very truly,

J. E. HURLEY, *General Manager.*"

In accordance with the suggestion of Mr. Hurley, the question of making a concerted movement throughout the west and southwest was undertaken, and the following letter submitted to the secretaries of the boards of health of Texas, Oklahoma, Missouri, Arkansas, Colorado, Illinois, Indiana, Kentucky, Minnesota, Nebraska, Iowa, North Dakota, South Dakota, Wyoming, Utah:

"TOPEKA, March 10, 1909.

"Dr. J. A. B. Adcock, Sec'y State Board of Health, Warrensburg, Mo.:

DEAR DOCTOR—I am enclosing you copy of a letter addressed to the general managers of the various railroads doing business in the state of Kansas, which letter is self-explanatory. Up to this time two of the largest companies doing business in this state have signified their willingness to comply with the request to abolish the common drinking cup, providing all the other lines do so. In one of the letters received, the general manager suggested the desirability and propriety of the boards of health of adjacent states taking a similar action. This suggestion seems to be a highly proper one, and I therefore submit the matter to you and express the hope that you may immediately present the proposition to all the lines doing business in your state to the end that the states west and to the southwest may join hand in hand in suppressing this common nuisance, the common drinking cup.

"Will you kindly advise me if this meets with your approbation, and if you will immediately present the matter to the proper officials of railroads operating in your state.

"Fraternally yours,

S. J. CRUMBINE, M. D., *Secretary.*"

It is respectfully recommended that the Board make the order contemplated in this letter, and authorize the secretary to give notice to that effect.

RECOMMENDATIONS.

The State Board of Health is highly honored by having so distinguished a membership composing her advisory board. We feel that without their wise counsel our deliberations might be unprofitable, or at all events faulty. Your secretary is under personal obligations to these distinguished gentlemen for their counsel and advice, which has been invaluable in the performance of his duties. Recognizing these facts, it is recommended, first, that the Board extend the courtesy and privilege to the advisory board of making motions and of entering into the discussion of all questions proposed, and that they be allowed all the privileges that are accorded to the members of the Board, excepting that of a vote in matters that could not be allowed under a strict construction of the law. Second, inasmuch as it is not infrequent that communications are received concerning questions on pathology, and inasmuch as every well-equipped health department in the United States has the office of pathologist, and inasmuch as in the preparation of the proposed tuberculosis exhibit the services of a pathologist are invaluable, it is recommended that the Board elect, as an advisory member, a pathologist, to

serve under the same conditions and upon the same terms as other members of the advisory board. Third, it is recommended that the Board authorize the early investigation of the pollution of streams with industrial wastes. The new water and sewage law has amended the definition of sewage so as to include industrial waste; and as many of the streams in southeast Kansas are basely polluted, and inasmuch as the people, particularly the farmers, are asking for relief from these conditions, it is urged that the Board authorize your engineer, chemist and secretary to make such investigation at the earliest possible date, looking towards the solution of this vexatious problem. Fourth, that a representative be selected to represent this department at the annual conference of the state and territorial boards of health with the surgeon-general of the public health and marine hospital service, to be held in Washington in May of this year. Fifth, that the Board authorize a committee to revise the standards of foods and drugs that shall be published under the revised food and drugs law, which committee shall report at the annual meeting of the Board to be held in June.

Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

MINUTES OF THE QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

The third quarterly meeting of the State Board of Health was held in the office of the secretary, March 30 and 31, the session beginning at 2 P. M. upon the 30th.

The president, Dr. A. B. Scott, of Jetmore, and the vice president, Dr. H. M. Bentley, being absent (due to the expiration of term), the secretary announced that the first thing in order should be the election of a president and vice president to fill the unexpired terms for these offices. Accordingly, upon motion, the rules were suspended and the secretary instructed to cast the vote of the Board for Dr. C. H. Lerrigo for president and Dr. Clay E. Coburn for vice president, which vote was accordingly recorded as such.

Upon roll call by the president, all members of the Board were present excepting Dr. J. B. Alexander, and Mr. C. D.

Welch, attorney for the Board. Mr. Welch was present during the second day's session. Of the advisory board all the members were present excepting Professors Marvin and Hoad.

The minutes of the last quarterly meeting were then read and approved, and upon motion adopted and ordered placed on file.

The secretary then read his quarterly report, which, upon motion, was adopted and ordered placed on file.

The Board then took up for discussion the recommendations of the secretary:

First, that the Board extend the courtesy and privileges to the members of the advisory board of making motions and of entering into the discussions of all questions proposed, and that they be allowed all the privileges that are accorded to the members of the Board, excepting that of voting in matters that could not be allowed under a strict construction of the law. Upon unanimous vote, this recommendation was adopted and the members of the advisory board accorded equal privileges with that of the members of the Board, with the exceptions noted.

Second, that the Board elect, as an advisory member, a pathologist, to serve under the same conditions and upon the same terms as other members of the advisory board. Upon motion, Dr. R. S. Magee, pathologist for the medical department at Washburn University, was elected as pathologist for the State Board of Health.

Third, it is recommended that the Board authorize the early investigation of the pollution of streams with industrial wastes; whereupon a motion was made authorizing a committee of three, of which the secretary be one, to investigate the conditions and pollution of streams in southeastern Kansas, and report results of such investigations to the Board at its annual meeting in June.

Fourth, it is recommended that a representative be selected to represent the state department of health at the annual conference of state and territorial boards of health with the surgeon-general of the public health and marine hospital service, to be held in Washington in May of this year. After some discussion, this matter was deferred until the following day, when, upon motion of Dr. Scott, the secretary was appointed as such representative, with authority to select his alternate in the event he could not attend.

Fifth, that the Board authorize a committee to revise the standards of foods and drugs that shall be permitted under the revised food and drugs law, which committee shall report at the annual meeting of the Board to be held in June of this year. Upon motion, the standing committee on food and drugs was authorized to formulate and recommend such standards for foods and drugs, and such regulations as are applicable and necessary under the revised food and drugs law, and make their report at the annual meeting.

Sixth, the question of the common drinking cup, as found upon railroad trains, in railway stations and in public and private schools, was then taken up, and a spirited discussion ensued. Upon motion, a committee was authorized to draft a resolution which should abolish the common drinking cup on railroad trains, in railway stations and in public and private schools and in state educational institutions from and after September 1, 1909, and that the secretary be instructed to correspond with other state boards of health, looking towards the making of similar and uniform regulations throughout the central west and central states. Accordingly, the following regulation was presented and unanimously adopted:

"WHEREAS, It has been repeatedly demonstrated that the use of what is usually known as the common drinking cup is dangerous, and is an undoubted source of communication of infectious diseases; now, therefore, in the interest of the public health,

"Be it ruled by the Kansas State Board of Health, That the use of the common drinking cup on railroad trains, in railroad stations, in the public and private schools, and the state educational institutions of the state of Kansas, is hereby prohibited from and after September 1, 1909. No person or corporation in charge of or control of any railroad train, or station, or public or private school, or state educational institution, shall furnish any drinking cup for public use, and no such person or corporation shall permit on said railroad train, or station, or at said public or private school, or state educational institution, the common use of the drinking cup."

Upon motion, the secretary was authorized to hire an assistant to do the usual and new work in his office until such time as the revised food and drugs law becomes effective upon its publication in the statute book.

The matter of the new hotel inspection law was then taken up for discussion. The secretary had invited representatives of various fire-escape devices and the fire marshals of cities of the first class to be present to take part in the discussion of

the new law and to demonstrate the various patent rope devices used as fire escapes. Accordingly, the following devices were demonstrated: The Small Escape, the Baird Reversible, the Everready, the Clark Traveling Man's Escape, the Davy Automatic, the Davy Portable, the Wilson, and the Fort Wayne Automatic. Mr. Howard also displayed several types of chemical fire extinguishers.

The fire chiefs entered into a discussion of features of the law, which threw much light upon some of the perplexing questions which naturally go with the formulating of rules and regulations of so far-reaching and complex a law as this hotel inspection law. Upon motion, a subcommittee composed of the president, the pathologist and the secretary was authorized to formulate rules and regulations for the enforcement of the hotel inspection law, after further consultation with the fire chiefs of the cities of the first class and representatives of the hotel men, which regulations shall be submitted to the members of the Board by mail.

Upon motion, the president and Doctor Coburn were instructed to investigate the epidemic at the Olathe School for the Blind. Upon motion, the Board adjourned until the following day, March 31.

The Board reconvened at the office of the secretary at nine A. M. All of the members of the Board were present excepting Dr. B. J. Alexander. The secretary then read the rules which were formulated by the secretary, in conjunction with the analysts for the Board, governing sanitation in food and drug inspection under the provisions of Senate bill No. 596 of the Session Laws of 1909. These regulations, after having been thoroughly discussed and amended, were then finally adopted by unanimous vote, and are as follows:

RULES AND REGULATIONS

Adopted under the provisions of Senate bill No. 596 of the Session Laws of 1909, by the Kansas State Board of Health, March 31, 1909.

Be it ruled by the Kansas State Board of Health:

Regulation 1. The floors, sidewalks, ceilings, furniture, receptacles, implements and machinery of every establishment or place where foods or drugs are manufactured, packed, stored, sold, offered for sale or distributed, and all cars, trucks and vehicles used in the transportation of food products, shall at no time be kept in an unclean, unhealthful and unsanitary condition, and for the purpose of this regulation, unclean, unhealthful and unsanitary conditions shall be decreed to exist if foods or drugs in the process of manufacture, preparation, packing, storing,

sale, distribution or transportation are not securely protected from flies, dust, dirt, and, as far as may be necessary, by all reasonable means from all other foreign or injurious contamination; and if the refuse, dirt and the waste products subject to decomposition and fermentation incident to the manufacture, preparation, packing, storing, selling, distributing, and transporting of food are not removed daily; and if all trucks, trays, boxes, baskets, buckets, and all knives, saws, cleavers and other utensils and machinery used in moving, handling, cutting, chopping, mixing, canning, and all other processes, are not thoroughly cleaned daily; and if the clothing or hands of operatives, employees, clerks or other persons therein employed are unclean.

Regulation 2. The side walls and ceilings of every bakery, confectionery, hotel and restaurant kitchen shall be well plastered, wainscoted or ceiled with metal or lumber and shall be oil-painted, or kept well lime-washed, and all interior woodwork in every bakery, confectionery, hotel and restaurant kitchen shall be kept well oiled or painted with oil paints, and be kept washed clean with soap and water; and every building, room, basement or cellar occupied or used for the preparation, manufacture, packing, storage, sale or distribution of food susceptible to contamination or damage shall have an impermeable floor made of cement, or tile laid in cement, brick, oiled wood or other suitable nonabsorbent material which can be flushed and washed clean with water.

Regulation 3. The doors, windows and other openings of every food or drug producing or distributing establishment during the fly season shall be fitted with self-closing screen doors and wire window screens of not coarser than 14-mesh wire gauze.

Regulation 4. Every building, room, basement or cellar occupied or used for the preparation, manufacture, packing, canning, sale or distribution of food or drugs shall have convenient toilet or toilet rooms separate and apart from the room or rooms where the process of production, manufacture, packing, canning, selling or distributing is conducted. The floors of such toilet rooms shall be of cement, tile, oiled wood, brick or other nonabsorbent material, and shall be washed and scoured daily. Such toilet or toilets shall be furnished with separate ventilating flues or pipes, discharging into soil pipes, or on outside of the building in which they are situated. Lavatories and washrooms shall be adjacent to toilet rooms and shall be supplied with soap, running water and clean towels, and shall be maintained in a sanitary condition. Operatives, employees, clerks and all persons who handle the material from which foods or drugs are prepared, or the finished product, before beginning work or after visiting toilet shall wash their hands and arms thoroughly in clean water.

Regulation 5. Cuspidors for the use of operatives, employees, clerks or other persons shall be provided whenever necessary, and each cuspidor shall be thoroughly emptied and washed out daily with disinfectant solution, and about five ounces of such a solution shall be left in each cuspidor while it is in use. No operative, employee or other person shall expectorate on the floor or side walls of any building, room, basement or cellar, where the production, manufacture, packing, storing, preparation or sale of any food or drug is conducted.

Regulation 6. No person or persons shall be allowed to live or sleep in any room of a bakeshop, kitchen, dining room, confectionery, creamery, cheese factory, or place where food is prepared, served or sold.

Regulation 7. No employer shall require, permit or suffer any persons to work, nor shall any person work, in a building, room, basement, cellar, or vehicle occupied or used for the production, preparation, manufacture, packing, storage, sale, distribution, and transportation of foods or drugs who is affected with any venereal disease, smallpox, diphtheria, scarlet fever, tuberculosis, or consumption, trachoma, typhoid fever, epidemic dysentery, measles, mumps, German measles (Rothein), whooping cough, chicken pox or other contagious disease.

Regulation 8. Every person or corporation in charge of or in control of or in authority over any of the places mentioned and described in these regulations shall be responsible for the condition thereof, and it shall be his or its duty to see that the provisions of these regulations with reference to the condition, arrangement and conduct of such places are carried out.

Regulation 9. The chief inspector or deputy inspector or agent or officer of the State Board of Health or any local board of health or police officer of any city shall have full power at all times to enter and inspect every building, room, basement or cellar occupied or used for the production for sale, manufacture for sale, storage, sale, distribution or transportation of foods and drugs and all utensils, fixtures, furniture, and machinery used as aforesaid; and if upon inspection any food or drug producing or distributing establishment, conveyance, employer, operative, employee, clerk, driver or other person is found to be violating any of the provisions of Senate bill No. 596, Session Laws of 1909, or the rules or regulations promulgated thereunder; or if the producing, preparation, manufacture, packing, storing, sale, offering for sale, distribution or transportation of food is being conducted in a manner detrimental to the health of the employees and operatives and to the character or quality of the food or drugs therein being produced, manufactured, packed, stored, sold, distributed or conveyed, the officer or inspector making the examination or inspection shall furnish notice of said violation to the offender and shall report such conditions and violations to the secretary of the State Board of Health, who shall issue an order in writing to the person or persons in authority at the aforesaid establishment to abate the condition or violation, or make any such improvements as may be necessary to abate them, within the period of five days or such reasonable time as may be required in which to abate them.

Regulation 10. The sidewalk display of food products is prohibited unless such products are inclosed in a showcase or similar device, which will protect the same from flies, dust, or other contamination; provided that food products that necessarily have to be peeled, pared or cooked before they are fit for consumption may be displayed on the sidewalk, provided that in such display the bottom of the container be at least eighteen inches above the surface of the sidewalk; but the sidewalk display of meat or meat products is prohibited.

Regulation 11. Confectionery, dates, figs, dried fruits, berries, butter, cheese and bakery products while on sale or display are required to be

properly screened or covered to effectively protect the same from contamination or damage by flies, dust, vermin, or other means.

BAKESHOP RULES.

Regulation 12. (a). Rooms in which the dough is mixed and the pastries prepared for baking must be well ventilated, with good supply of fresh air and light. Walls, ceilings, floors, proof boxes, pans, kneading trough and machines must be kept in a clean and wholesome condition. Closets and lavatories must not be directly connected with the working rooms, and sewerage pipes must not be led through them.

(b). Before beginning work and before preparing and mixing the ingredients, the persons engaged in the work must wash their hands and arms thoroughly in clean water. For this purpose sufficient washbasins, together with soap and clean towels, must be provided.

(c). Persons employed in the establishment must, while working, wear sufficient clothing.

(d). Persons having contagious or loathsome diseases must not be employed in bakeries.

(e). All windows and doors must be protected from flies.

(f). The supplies of flour must be stored in dry places, where they are protected from all contamination. Water used to coat the bread must be provided fresh every day. The bread and pastry must not be laid on the bare floor.

(g). It is strictly forbidden to sit or lie on any of the tables, shelves, etc., which are intended for use for the dough or baked articles. Chairs and benches in sufficient number must be provided to sit on.

(h). The working rooms must be furnished with cuspidors, at least one in each room, which must be cleaned daily. Spitting on the floor is forbidden. Smoking, snuffing, chewing of tobacco, etc., is forbidden in the working rooms while work is in progress.

(i). The working rooms must not be used for any purposes other than those strictly connected with the preparing and baking of foods; especially must they not be used as washing, sleeping, or living rooms.

(j). Domestic animals must not be kept in the bakeshop.

(k). All barrels, boxes, tubs, pails, casks, kneading troughs, machines or other receptacles containing food preparations must be kept covered, protecting same from contamination.

(l). These bakeshop rules shall be posted in each working room.

SLAUGHTERHOUSE RULES.

Regulation 13. (a). Every person owning, leasing or occupying any place, room or building wherein cattle, sheep or swine are killed or dressed, or any market, public or private, shall cause such place, room, building, or market to be kept at all times thoroughly cleaned and purified, and all offal, blood, fat, garbage, manure, or other unwholesome or offensive refuse shall be removed therefrom at least once every twenty-four hours, if used continuously, or, if only used occasionally, within twenty-four hours after using; and the floors of such building, place or premises shall have an impermeable floor made of cement, or tile laid in cement, brick, or other nonabsorbent material, which can be flushed and washed

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(l). These bakeshop rules shall be posted in each working room.

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Regulation 13. (a). Every person owning, leasing or occupying any place, room or building wherein cattle, sheep or swine are killed or dressed, or any market, public or private, shall cause such place, room, building, or market to be kept at all times thoroughly cleaned and purified, and all offal, blood, fat, garbage, manure, or other unwholesome or offensive refuse shall be removed therefrom at least once every twenty-four hours, if used continuously, or, if only used occasionally, within twenty-four hours after using; and the floors of such building, place or premises shall have an impermeable floor made of cement, or tile laid in cement, brick, or other nonabsorbent material, which can be flushed and washed

clean with water, and which shall be approved by the State Board of Health. No blood pit, dung pit, offal pit, or privy well shall remain or be constructed within any such place, room or building; nor shall swine be kept nor fed within 150 feet of the slaughterhouse. Doors and windows must be screened to exclude flies, and side walls painted or white-washed.

(b). Slaughterhouses are required to be kept in a sanitary condition, and unsanitary conditions shall be deemed to exist wherever and whenever any one or more of the following conditions appear or are found, to wit: If the slaughterhouse is dilapidated and in a state of decay; if the floors or side walls are soaked with decaying blood or other animal matter; if efficient fly screens are not provided; if cobwebs or other evidence of filth or neglect are present; if the drainage of the slaughterhouse or slaughterhouse yard is not efficient; if maggots or filthy pools or hog wallows exist in the slaughterhouse yard or under the slaughterhouse; if storage hides kept in slaughterhouse are in pools of filth, or infested with maggots, or giving out vile odors; if the water supply used in connection with the cleaning or preparing is not pure and unpolluted; or if the odors of putrefaction plainly exist therein; if bones or refuse are not burned, or buried; if dead animals are being fed; if carcasses are transported from place to place when not covered with clean white cloths, or if kept in unclean, bad-smelling ice boxes, refrigerators or storage rooms.

(c). If the floors of such killing places are found to be in an unsanitary condition by the inspector or health officer, he may require such floors to be constructed of cement, or tile laid in cement, or brick, so as to prevent the blood, foul liquid or washings from being absorbed. All new slaughterhouses shall be constructed with cement floor and killing beds.

Published in the official state paper April 8, 1909.

The matter of a state-wide educational campaign for the suppression and prevention of tuberculosis was taken up and discussed at some length. It was thereupon ordered that the secretary and pathologist proceed to assemble an exhibit to be used in the educational campaign, which exhibit shall be second to none in the country. The question of securing a competent lecturer to be placed in charge of this exhibit was then discussed and Mr. Roy Stockwell, who was a candidate for this position, being present was asked to give his views on the question, which he accordingly did. Letters of recommendation and an application of another person were read, whereupon the following resolution was introduced and unanimously adopted:

Resolved, That it is the sense of this Board that Dr. S. J. Crumbine be instructed to select a man for tuberculous educational work from the list of available candidates and that he make the best possible terms for this work, at the same time keeping in mind that the most competent man that our financial means will permit should be selected.

Upon motion, the Board went into executive session for the purpose of selecting two additional inspectors, one for foods and one for drugs, as required under the provisions of the amended food and drugs law. An examination having been held on March 25th by the Board, composed of the analysts for the board and the chief food and drug inspector, the results of such examination were submitted to the Board, whereupon Mr. A. E. Ice, of Topeka, was by ballot elected as the new food inspector, and Mr. D. F. Deem, of Stark, was elected as the new drug inspector.

Upon motion, the following names of those who passed the examination, namely, Mr. A. E. Langworthy, Atchison, Mr. I. E. Burke, West Mineral, drug inspectors, and Mr. A. Bigelow, Lawrence, and Mr. Cecil H. Brooks, Abilene, food inspectors, were placed upon the eligible list for appointment as inspectors in case of vacancies for a period of one year from date.

The executive session being ended, Prof. Sayre submitted the matter of standards for deteriorated patent medicines, and upon motion the following regulation was adopted:

Resolved, That a committee on standards for unofficial material be appointed, the committee to be composed of five members of which the present drug inspector shall be one, the remaining members of the committee to be appointed by the chief food and drug inspector.

The committee on inspection of state institutions then made the following report:

"TOPEKA, KAN., March 30, 1909.

"Doctors Coburn and Lerrigo inspected the Kansas School for the Blind at Kansas City, Kan., December 11, 1908. This institution is a school composed of about one hundred boys and girls. It is well equipped with buildings. The plumbing, water and food supply all seemed to be in excellent condition excepting for one or two minor matters to which we called the attention of the superintendent.

"The health of the inmates is good, most of the ailments being colds and sore throats. To guard against this, we recommended the maintenance of the school rooms at an even temperature and suggested that they be properly equipped with thermometers.

"Respectfully submitted.

C. H. LERRIGO,
CLAY E. COBURN."

The new law known as the barber's law, which becomes effective upon its publication in the statute book, was then brought up for discussion and the following motion adopted:

Moved that a committee be appointed, composed of the sec-

retary and two other members, to formulate sanitary rules and regulations to carry out the provisions of the act and that such committee report their labors at the annual meeting in June.

The president appointed Drs. Milligan and Scott on this committee. The president also announced the appointment of Dr. Huffman and Prof. Hoad to act with the secretary in the matter of the investigation of industrial wastes in southeastern Kansas.

The following auditing committee was then appointed: Doctors Milligan, Aldrich and Huffman.

The following bills were audited and allowed.

Dr. Chas. Lerrigo	\$10 00
Dr. J. A. Milligan	13 20
Dr. Clay E. Coburn	12 70
Chas. Welch	28 38
Dr. Chas. Huffman	32 60
Dr. J. R. Scott	27 20
Dr. J. B. Carver	26 24
Dr. Harry Aldrich	28 72
Dr. V. C. Eddy	37 36
Prof. L. E. Sayre	2 68
Prof. J. T. Willard	4 78

ANNUAL REPORT.

Mr. President and Members of the Board:

June 1, 1909.

GENTLEMEN—Agreeable to your instructions, the subcommittee appointed to confer with representatives of fire chiefs and hotel men, for the purpose of formulating rules and regulations under House bill No. 124, known as the hotel inspection law, met on May 3d, and after a careful discussion and investigation of the law and the entire subject matter relating thereto, formulated regulations which were submitted to you by mail and which received your unanimous approval.

These regulations being of such importance, and the time necessary to thoroughly work out all the various problems associated with this new law, made it impossible to complete the work before the present time. Thus, it was thought wise to present the matter before the Board again while in actual session before having the regulations printed in the official state paper and in order that there might be no question as to their legality.

The fire-escape problem has been gone over with the state labor commissioner, the state architect, and the Eldridge fire insurance rating bureau, a number of times, and we believe that the regulations which will be submitted to you are not only reasonable and workable, but in harmony with the law and with the policy that should be assumed by this Board in protecting the traveling public while in the hotels of this state.

The subcommittee appointed for the purpose of assembling a state tu-

berculosis exhibit, have to report progress. Dr. S. C. Emley, professor of pathology at the University Medical School, Lawrence, has been secured as lecturer for the State Board of Health, to accompany the state exhibit when ready to start out on its state-wide campaign. The temporary services of Miss Neiswenger have also been secured in the capacity of visiting nurse. Inasmuch as the idea of a visiting nurse with an exhibit of this kind is experimental, it was thought best not to enter into a contract for a longer time than three months. If such arrangement proves to be satisfactory and successful, which I trust it may, the nurse will be continued as a part of the working force of the educational exhibit.

The subcommittee appointed to draft rules and regulations for the enforcement of the so-called barber's law have formulated and agreed upon regulations which are submitted for your approval. Section 2 of this law provides that the State Board of Health shall inspect or cause to be inspected all the barber shops in this state. It is for the Board to determine definitely the method and means for making this inspection. Two methods seem to suggest themselves:

First, charging the local health officers to perform these inspections at stated intervals of all barber shops within their respective jurisdictions.

Second, the establishment of an inspection system by selected barbers under some sort of a fee system. I trust that the Board will determine this matter at the present session.

Your committee on standards for foods and drugs, had an all-day session and revised the rules and regulations of the food and drugs law in such particulars as was deemed necessary to comply with the revised food and drugs law, and which will give the department more definite authority and direction along certain important particulars. The committee thought best not to submit a report on the revision of standards at this time. It was thought that inasmuch as the national and state food commissioners meet in annual session in August, at which time the question of standards will be again discussed and some of these standards changed, that we should wait until after this meeting for the purpose of gaining additional information and would then be ready to report at the quarterly meeting in September.

Before the resolution passed at the last meeting of the Board in relation to the common drinking cup was officially promulgated, the board of railroad commissioners had given a written opinion to the Missouri Pacific Railway Company, that they would not permit the abolishment of the common drinking cup on their road, although they had no objection to the installation of any device whereby those who desired could secure an individual cup. This, in effect, meant that no action would be taken by the railroad companies so long as the railroad commissioners assumed this attitude. Accordingly, an opinion was asked of the attorney-general as to which Board would have the final jurisdiction in a case of this kind. His reply was to the effect that the State Board of Health had jurisdiction.

The so-called anti-spitting law became effective on May 29, upon its publication in the statute book, and I desire that the Board by resolution call on the city authorities of every city in this state to enforce the provisions of this law. Naturally a statute of this kind can only be en-

forced by each city instructing the police officers to see that its provisions are complied with.

The revised water and sewage law, which became effective upon its publication in the statute book, provides that the State Board of Health may upon their own motion investigate the wholesomeness of the water supplied to any city, and if they have reason to believe that such supply is not wholesome, to make an order providing for a change of supply or such changes in operation as will insure a wholesome supply.

It is a matter of common knowledge that there are a number of water supplies in several of our large cities that are notoriously unsafe and unwholesome. Your secretary and engineer desire instructions as to whether or not they shall proceed to make an investigation of the water supply of these suspected places or whether we will wait until complaint is made by the mayor or some local health officer. We believe that the policy of the Board should be clearly defined in this particular.

On November 7, 1907, permission was given to the city of El Dorado, to discharge their untreated sewage into the Walnut river for a period of two years, with the understanding that at the expiration of that time this permit would not be renewed. Accordingly on April 21 I sent the following letter to the mayor of El Dorado:

"Mayor, El Dorado, Kan.:

"DEAR SIR—I have to advise you that the permit granted to your city to discharge untreated sewage from your sewerage system into the Walnut river will expire on November 7, 1909.

"This is to notify you that this permission can not be extended beyond this date for the reason that the Walnut river is used as a source of water supply for the city of Winfield. It was understood between the officials in charge of your city at that time and this department that this permission would not be extended and that your city would be expected to install a septic tank and contact beds or some other suitable appliances or device for the purpose of purifying sewage before it is emptied into the Walnut river. I am advising you thus early in order that you may make your arrangements and have the necessary time to construct this plant and have the same in operation on or before November 7, 1909.

Very truly yours, S. J. CRUMBINE, M. D."

Inasmuch as the city of Winfield secures its water supply from the river, and inasmuch as after repeated tests and investigations they have been unable to secure an adequate supply from any other source, it becomes the manifest duty of this Board to protect that supply from further contamination, and in order that the city of El Dorado might have due notice and abundant time to construct a sewage purification plant before the expiration of their permit, this notice was sent to them and I trust may have your special endorsement and approval.

This department is charged with the duty of assisting the state and county sealers in the enforcement of the new weights and measures law. Inasmuch as this law is so far-reaching, including every sort of a scale from a hay scale to an apothecary's measure and every commodity that is sold by weight, measure or count, it would be quite impossible with our present force of inspectors to cover this entire field. I therefore suggest that the Board make a definite statement that no attempt will be made by this department to enforce the provisions of this law except in so far as it relates to food and drug products.

The general health of the state during the past fiscal year, as reflected in reports received from the county health officers, has been singularly free from any widespread or unusual epidemic of a serious nature. Hitherto in speaking of the healthful conditions in this state, with more or less show of pride, we have announced that "all is well," which reminds one of the town crier of the cultured city of Boston, who many years ago on a certain night at the hour of twelve announced, "Twelve o'clock, and all is well; the minister's daughter has eloped with the coachman, the town clerk has fallen down stairs and broken his leg and the old grist mill has burned to the ground, and all is well."

All is well, notwithstanding the day's tragedies and catastrophes. Thus sanitarians have for many years past continued to publish their tables of frightful mortality of preventable diseases, at the same time announcing in assuring tones that "all is well."

While Kansas may well feel proud of her low rate of mortality, yet the annual toll of lives to the greatest scourge of mankind is of such numbers as to challenge our attention and efforts in putting into operation every method within our power for its control, and it can not be said that "all is well" in this or any other state until the blessed day shall come when tuberculosis is but a memory among infectious diseases.

Respectfully submitted. S. J. CRUMBINE, M. D., *Secretary*.

MINUTES OF THE ANNUAL MEETING OF THE STATE BOARD OF HEALTH.

JUNE 1, 1909.

The State Board of Health met in annual session in the office of the secretary, on June 1, 1909, with all the members of the Board present. All the members of the advisory board were present excepting Prof. F. O. Marvin. The minutes of the previous meeting were read and, upon motion, approved and ordered placed on file. The annual report of the secretary was then read and ordered placed on file.

The special committee on regulations for the hotel inspection law then made their report, after which the regulations were read by section, and, upon vote, were unanimously adopted as amended. The regulations as finally adopted are as follows:

Upon motion, the following rope and fire-escape devices were approved:

Davy Automatic Safety; Davy Portable; Clark's Traveling Man's, No. 2; the Small; the Baird Reversible; the Everready; the Wilson; the Fort Wayne Automatic; the Boyd and Sanders System; Gibb's; McArthur Portable Ladder.

Upon motion, it was ordered that only such chemical fire extinguishers as had been approved by the underwriters' laboratories shall meet the approval of the State Board of Health, and that only such approved chemical fire extinguishers can be used in hotels in this state.

The blank for the fire protection and sanitary inspection of hotels, together with the certificate to be issued for conducting the business of the hotel, were then approved.

RULES AND REGULATIONS

Adopted by the State Board of Health in accordance with Chapter 148, Session Laws 1909, known as the "Hotel Inspection Law."

Be it ruled by the State Board of Health:

INSPECTION.

Regulation 1. The inspection of hotels shall be divided into two general subdivisions—the inspection of fire protection apparatus, and the inspection of sanitary conditions. As specifically required by law, rules and regulations, the fire marshal or fire chief is hereby charged with the supervision of construction and inspection of fire escapes and all fire protection apparatus and appliances of every description, including

fire escapes, gongs, ropes and rope devices, lights, notices, etc., and the local health officer is hereby charged with the inspection of sanitary conditions required under the law, and the fire marshal and local health officer shall conjointly make and certify to the inspection prior to the issuance of certificate to the hotel.

The food and drug inspectors of the State Board of Health are charged with the inspection of all hotels, as they go from place to place in the performance of their duty under the food and drug law. They shall check up the inspection made by the local fire marshal and local health officer, and observe if hotel has a certificate of inspection properly posted, and perform such other duties as the law and the State Board of Health may direct.

CERTIFICATES.

Regulation 2. The issuance of a certificate for conducting the business of a hotel, as required under the provisions of this law, shall be conditioned upon the compliance with the law, rules and regulations as certified to by the local inspectors aforesaid, and the approval of said inspection by the secretary of the State Board of Health.

TRANSIENT GUESTS.

Regulation 3. A transient guest within the meaning of the law shall be defined as a guest who is not a constant and continuous occupant of such hotel, or room therein, for more than a month, or not boarding by the month, or taking board for less time than by the month. All hotels or public lodging houses or places where sleeping accommodations are furnished for pay to transient guests, conforming to the definition herewith, shall be construed in the definition of hotel in accordance with section 1 of chapter 148, Session Laws of 1909.

LIGHTS.

Regulation 4. At each opening to fire escape there shall be placed a red light, which shall be kept burning during all hours in the night time. If electric, such red lights shall be on an independent and distinct circuit, separate and apart from all other electrical circuits in the building. Oil lamps may be used provided the same are equipped with a metal bowl. No other form of light is permitted to be used.

GONGS.

Regulation 5. One or more gongs, not less than ten inches in diameter, and large enough to be heard loudly on all parts of such floor, shall be placed near the center of the building on each floor, which gong shall be arranged to operate electrically in connection with the regular electric supply of the building, but will not be permitted to be operated electrically in connection with dry cells. In the absence of an electrical supply, gongs shall be operated by a pull wire. The means for operation of these gongs must be so constructed as to be operated from the office or the ground floor. The working and efficiency of these gongs shall be tested at least once every week by the hotel manager, and by inspectors on their visits.

WATCHMEN.

Regulation 6. The time-recording device to be used by the night watchman, which are required to be provided in hotels containing fifty or more sleeping rooms, must be a standard device, approved by the national board of fire underwriters, or have the written approval of the local fire marshal or fire chief; and the size and condition of the hotel shall be the guide for the frequency of patrol, subject to the fire chief's written approval; providing, that no portion of the hotel, from the basement to the top floor, shall be visited less frequently than once every hour from nine P. M. to six A. M.

FIRE ESCAPES.

Regulation 7. Fire escapes shall be well fastened and secured, and shall be of such number and of such material, design and construction as shall receive the written approval of the local fire marshal or fire chief, as provided herein, and shall have a landing not less than six feet in length and three feet in width, guarded by iron rails, the first of which shall be not less than twelve inches from platform, and the second not less than thirty inches from platform, or in lieu thereof may be guarded by a single rail not less than thirty inches from the platform, with heavy screen-wire grill from rail to platform, the screen or grill to be securely fastened to platform and rail, at each floor above the ground floor. Such landings shall be connected with each other by wrought or malleable iron or steel stairways not less than two feet wide, with steps of not less than six inches tread, placed at an angle of not more than forty-five degrees, protected by two or more well-secured hand rails on both sides of such stairways, and reaching to the first floor above the ground floor, and with a drop ladder, not less than eighteen inches wide, from the lower platform, reaching to the ground. Such fire escapes shall be sufficient if a perpendicular iron or steel ladder be used between the platforms, instead of the stairways, provided such ladder is placed at the extreme outside of the platform and at least three feet from the wall of the building, and provided said ladder is equipped with iron rounds not more than fifteen inches apart and not less than three-fourths inch in thickness, and the side rails of which are not smaller than three-eighths by two inches if rectangular, or one-and-a-half-inch gas piping if round. In all cases there shall be a ladder extending from the topmost platform to at least three feet above the fire wall or coping on the roof. In no event shall ladders on stairways pass directly in front of an opening in the wall. The provisions of the law as to obstructions to egress and the posting of notices must be literally observed; provided, that all iron or steel fire escapes which were constructed prior to the passage of the law, and which may receive the written approval of the local fire marshal, may be approved as complying with the provisions of this law. Fire escapes must be kept adequately painted at all times, to preserve metal parts from rust.

FIRE EXTINGUISHERS.

Regulation 8. Each and every hotel shall be provided with at least one efficient chemical or other efficient fire extinguisher of approved pattern for every 1500 square feet or less of floor area on each floor.

Neither chemical extinguishers of the breaking-bottle type nor hand grenades will be approved. Such extinguishers shall be placed in convenient permanent locations in the public hallways, outside of the sleeping rooms, and within easy reach, and shall be charged at intervals of not more than six months. Extinguishers shall be provided with a tag, which tag shall bear the date on which extinguisher was last charged, written in ink, and by whom charged. Hotels equipped with standpipe and hose as provided by the law are not required to have the chemical extinguishers.

BLIND ROOMS.

Regulation 9. The maintaining, letting or renting, for sleeping purpose, by guest or any other person, of a so-called blind room, or room without at least one direct exit to the outside of the building or light wells, air shaft or courts, is absolutely prohibited.

ROPE OR ROPE-ESCAPE DEVICES.

Regulation 10. Every hotel shall provide in each room or sleeping apartment above the first or ground floor a rope not smaller than three-fourths inch in diameter, attached to an iron chain; the chain long enough to reach outside the window sill, which chain shall be securely fastened to the casing or wall at a point not lower than three and one-half feet above the window sill, the rope to be of sufficient length to reach the ground. In lieu of the above-described rope and chain, there may be used any form of rope fire-escape device or portable ladder approved by the State Board of Health. Such chain and rope or escape device shall be kept in plain sight at all times, and shall not be covered by curtains or other obstructions. Rope must be so reeled as to insure freedom from tangle or knots when put to use, and be kept within easy reach. A card bearing the words "Fire Escape," in letters not smaller than two inches high, and printed in large letters, calling attention to such rope and chain or escape device, and giving directions for its use, shall be posted in a conspicuous place in each bedroom or sleeping apartment.

ELEVATOR SHAFTS.

Regulation 11. Passenger or freight elevators hereafter erected or remodeled shall be enclosed with an iron sheeting, brick or stone, as nearly air tight as possible, and with tight doors to shut shaft, or there shall be automatic trap doors in each floor of said shaft; provided, that in hotels more than three stories in height such elevator shafts shall be enclosed with brick or stone, unless otherwise specifically agreed to and approved by the fire marshal or fire chief and secretary of the State Board of Health.

Regulation 12. Each hotel is required to comply literally with section 6 of the law, which section is self-explanatory. Section 7 and section 9 of the law requires that each hotel shall provide each bed, bunk, cot, or other sleeping place for the use of each guest, clean sheets, clean pillow slips, also provide clean individual towels. The upper sheet provided for each bed, bunk, cot or other sleeping place shall be of sufficient width and length to reach the entire width and length of the bed and to fold back over the bedding at the upper or head of such bed, bunk, cot or

other sleeping place at least fourteen inches. Section 8 of the law provides that all sleeping rooms shall be disinfected once in each three months, such disinfecting to be done in accordance with the rules and regulations prescribed by the State Board of Health.

CLOSETS.

Regulation 13. Water closets and privies shall be disinfected at least once every week, or sufficiently often to prevent obnoxious odors or effluvia arising therefrom. A simple and inexpensive solution may be prepared from chloride of lime, one pound; water, three gallons. This solution to be used freely in all closets, privy vaults, sinks, drains, etc.

Regulation 14. Section 10 of the law, concerning the sanitary condition of the hotel kitchen, dining room, cellar, office, ice boxes, and all places where foods are kept, prepared or stored, shall be literally observed. Places and receptacles where food is kept or stored are required to be kept mouse and rat proof and properly screened. Serving tables, trucks, trays, boxes, buckets, knives, saws, cleavers and other utensils and machinery used in moving, handling, cutting, chopping, mixing or serving foods are required to be thoroughly sterilized daily by hot water or steam, and thorough cleansing, and the clothes and hands of cooks, stewards and waiters to be clean and sanitary. Canned goods, when opened, or prepared foods containing any of the fruit acids, are not permitted to be stored in tin or zinc containers.

Regulation 15. The local fire marshal and fire chief and local health officer are hereby charged with the enforcement of the law, filing complaint with the county attorney in case of the violation of the law or the rules and regulations adopted thereunder, and notifying the State Board of Health of such action.

The action of the secretary in the matter of securing Dr. S. C. Emley, of the University Medical School, as lecturer for the State Board of Health to accompany the state tuberculosis exhibit and in securing Miss Neiswanger as visiting nurse for the same purpose was approved.

The subcommittee appointed to draft rules and regulations for the enforcement of the so-called barber's law then made their report, which, after several amendments and upon motion and a vote, was unanimously adopted. The adopted regulations are as follows:

RULES AND REGULATIONS

Adopted under chapter 224, Session Laws 1909, in relation to barber shops, barber colleges, public bathrooms and public bathhouses.

Be it ruled by the State Board of Health:

INSPECTION.

Regulation 1. All barber shops and barber schools, public bathrooms and public bathhouses, shall be open for inspection at any time during business hours to the inspectors of the State Board of Health or to any local sanitary or health officer.

GENERAL SANITATION.

Regulation 2. All places mentioned in regulation 1, together with their furniture, fixtures, instruments and utensils, are required to be kept in a clean and sanitary condition.

INSTRUMENTS.

Regulation 3. Mugs, shaving brushes, razors, scissors, clipping machines, pincers, needles, the contact cup or pad of vibrating or massage machines, and all other instruments, shall be sterilized either by immersion in boiling water, or in alcohol of at least sixty per cent strength, or by formaldehyde gas or solution, after each separate use. Combs and brushes shall be thoroughly cleansed with soap and water at least once daily.

TOWELS.

Regulation 4. Clean towels shall be used for each person served. Towels shall not be used for more than one person until laundered.

ALUM.

Regulation 5. Alum or other material used to stop the flow of blood shall be applied only on a clean cloth or towel or other clean appliance. The use of syptic sticks or pencils is prohibited.

POWDER PUFFS.

Regulation 6. The use of powder puffs and sponges is prohibited.

HANDS.

Regulation 7. Every barber shall thoroughly cleanse his hands immediately before serving each customer.

AIR AND WATER.

Regulation 8. Every barber shop and bathroom shall be well ventilated and provided with running hot and cold water.

SLEEPING ROOM.

Regulation 9. No barber shop, barber school or public bathroom shall be used as a sleeping room.

SKIN DISEASES.

Regulation 10. After serving persons who have eruptions on the face or scalp, or are afflicted with contagious skin disease, all metal tools and instruments, brushes and combs that have been used on such person shall be thoroughly sterilized by boiling water or the use of formaldehyde gas before being used again, and the hands shall be thoroughly cleansed with disinfecting solution, and all towels and damp cloths used shall be thoroughly boiled before being laundered.

VENEREAL DISEASE.

Regulation 11. No person shall knowingly be served in any barber shop, public bathroom or public bathhouse, who is suffering from syphilis, such prohibition to continue until more than six months has elapsed from date of infection. No person shall knowingly be served in any public bathroom or public bathhouse who is suffering from gonorrhœa.

CONTAGIOUS DISEASE.

Regulation 12. No person suffering from measles, scarlet fever, small-pox, diphtheria or diphtheritic sore throat or tuberculosis shall be served in any barber shop, barber school, public bathroom or public bathhouse.

DISINFECTION OF TOOLS, ETC.

Regulation 13. All tools or instruments used by barbers outside the shop in serving any person suffering from infectious or contagious diseases, or used on a corpse, are required to be thoroughly and efficiently disinfected with formaldehyde solution or formaldehyde gas immediately after using the same.

BARBERS MUST BE FREE FROM INFECTIOUS DISEASE.

Regulation 14. No person suffering from any infectious or contagious disease, including tuberculosis, shall serve any person in any barber shop, barber school, public bathroom or public bathhouse in this state.

RULES POSTED.

Regulation 15. These rules and regulations shall be conspicuously displayed in each barber shop, barber school, public bathhouse and public bathroom in Kansas.

S. J. CRUMBINE, M. D., *Secretary*.

Published in the official state paper June 7, 1909.

A discussion then ensued as to whether some form of inspection should be included in putting into effect the provisions of the law. Labor Commissioner Johnson and Mr. Hypes, a barber of Topeka, appeared before the Board and spoke in behalf of a system of inspection, whereupon a motion was made and carried that the committee appointed to draft rules and regulations be continued, to report at the next quarterly meeting.

The standing committee on standards for food and drugs then made their report upon the revision of the regulations under the revised food and drugs law. These regulations were then taken up by section for discussion and amendment. Several gentlemen from New York appeared before the Board to argue the merits of the use of methyl alcohol in external medicinal preparations and request that our regulation 26 be revised to permit the use of methyl alcohol. After a discussion of several hours by the scientific gentlemen of New York and of the advisory board, upon motion, regulation 26 was adopted as reported by the subcommittee, together with a repeal of the former sections that are in conflict therewith.

NOTE.—These rules and regulations have been published in pamphlet form, and are available upon request.

Upon motion of Dr. Scott, the communication addressed to the mayor of El Dorado under date of April 21 was approved,

by the following motion: "Moved that the permit of the city of El Dorado to discharge untreated sewage into the Walnut river be not extended."

A general discussion of the new weights and measures law then followed, based on the secretary's report that inasmuch as this department, with our present force of inspectors, could not cover the entire field of weights and measures, it was suggested that no attempt be made to do such work as we were physically incapable of doing and that our efforts be devoted as far as possible to the enforcement of the law as pertains to the food and drug inspectors. This sentiment seems to meet the approval of the Board. Upon motion, the Board adjourned, to meet in the office of the secretary at 7:30.

Upon reconvening the further discussion of the secretary's report was continued. Mr. Welch made a motion that the rules that were prepared by the Kansas board of licensing embalmers, with the secretary of this Board, be submitted to a subcommittee to report the following day. Accordingly the report was referred to a committee composed of Drs. Coburn and Milligan and Attorney Welch.

Upon motion, the application for the disinterment of a body, the cause of death being diphtheria, was granted.

Upon motion, the Board adjourned until 9:30 the following day.

The Board reconvened in the office of the secretary at 9:30 A. M., all the members of the Board being present excepting Dr. V. C. Eddy. Upon motion, the following rules and tolerances were adopted, under chapter 264, Session Laws of 1909, known as the weights and measures law:

NOTE.—These rules and tolerances have been published in phamplet form and are available upon request.—*Secretary.*

SPECIFICATIONS FOR LINEAR MEASURES.

Linear measures to be used in tests by sealers of weights and measures must comply with the following requirements:

1. Standards of length must be made of brass, nickel steel, or of steel.
2. Standards of length must either be provided with stops on both ends, one of which may allow the excess or deficiency of a measure under examination to be determined, or they must be so graduated that the bar projects on both ends beyond the beginning and end graduation.
3. All tapes must be made of steel or nickel steel. No cloth tapes will be allowed.
4. All boxwood rules used by sealers must be brass-bound.

SPECIFICATIONS FOR METAL CAPACITY MEASURES.

A. Metal liquid capacity measures should comply with the following requirements.

1. The sides of the vessel must be smooth and must have no seam.
2. The top must be provided with a stiff ring.
3. The bottom should be ribbed, or if not ribbed must be of brass at least three thirty-seconds of an inch thick.
4. The sides must not have a ridge at the bottom.
5. Handles must be provided.
6. The handles must be smooth and screwed on at the top and at the bottom.
7. The measures must be furnished with a ground glass "slicker" plate.

Measures and Maximum Allowable Error.

$\frac{1}{2}$ peck	0.0672 cubic inch
1 quart	0.0336 cubic inch
1 pint	0.0168 cubic inch
2 dekaliters	5 cc
1 dekaliter	2.5 cc
5 liters	2 cc
2 liters	1 cc
1 liter	0.5 cc
$\frac{1}{2}$ liter	0.25 cc
2 deciliters	0.2 cc
1 deciliter	0.1 cc

SPECIFICATIONS FOR WOODEN DRY CAPACITY MEASURES.

Wooden dry capacity measures must be iron-bound and varnished. The depth of each measure must be uniform and the measure must be circular.

Upon motion, the Board kindly requested that the secretary take a vacation of two or three weeks in the near future.

The report of Prof. Hoad, engineer for the Board, was then read, and upon motion, was adopted and placed on file. The engineer also submitted forms of applications, requiring certain information to be submitted to the Board in the extension and inauguration of a new water supply or new sewerage system of cities or corporations. Also, a blank form for the issuing of a permit to discharge untreated sewerage into the natural waters of the state. Upon motion, these forms were adopted as the official forms and the information required by the State Board of Health under the revised water and sewage law.

The bacteriologist's report was then read by the secretary, which is as follows:

Total number of specimens examined from July 1st of last year until present time, 1533.

Number of specimens of sputum examined, 965. Of this number 271 were positive.

Number of specimens from suspected cases of diphtheria, 368. Of this number 134 were positive.

Samples of water tested for the bacillus *coli communis*, 78. Of this number 40 were positive.

Specimens of blood tested for the Widal reaction, 75, of which 25 were positive.

Number of specimens from cases of suspected gonorrhoea, 32. Of this number 15 were positive.

The brain of eight dogs and one cat were examined for the Negri bodies. Three were positive.

Two specimens of suspected cerebrospinal meningitis were positive.

One case of glanders and one of trichina.

This year's work will show an increase of 400 or more specimens examined over the number examined during the preceding year. The number examined during the fiscal year of 1907-'08 was 1212.

Upon motion, the report was adopted.

The special committee appointed on the embalmer's examining board regulations then made their report, and upon motion the report was adopted as amended by the committee. These regulations, together with a form of paster as specifically required under the law to be adopted by the State Board of Health, were then formally approved and adopted.

The annual election then took place, with the following result:

President, Dr. C. H. Lerrigo.

Vice president, Dr. Clay E. Coburn.

Engineer for the State Board of Health under the new water and sewage law, Prof W. C. Hoad.

Bacteriologist, Dr. S. A. Greenfield.

Assistant chief food and drug inspector, W. J. V. Deacon.

The members of the advisory board were all unanimously elected. The following accounts were then audited:

Prof. L. E. Sayre	\$2 60
Dr. Coburn	12 70
C. E. Welch	23 50
Dr. Alexander	18 90
Dr. Scott	29 70
Dr. Aldrich	29 86
Dr. Lerrigo	16 08
Dr. Carver	27 70
Dr. Huffman	31 60
Dr. Milligan	16 70
Dr. Eddy	29 94
W. C. Hoad	5 08
E. H. S. Bailey	

Upon motion, the Board adjourned.

S. J. CRUMBINE, M. D., *Secretary.*

QUARTERLY REPORT.

Members of the State Board of Health:

SEPTEMBER 28, 1909.

GENTLEMEN—Since the passage of the new laws by the last legislature, the department has been so burdened with additional duties and accumulated work and responsibilities as to necessitate the hiring of more help and the enlargement of our quarters for doing the work. After repeated and insistent demands, the Executive Council has established this department on the north side of the east wing, and we now feel that we have room enough to turn around without going out into the hall to do it. We have not, however, sufficient help in the office to expeditiously and promptly take care of the constantly growing demands of the office. We should at least have one more stenographer and an additional clerk, which I trust the legislature will grant us at their next session.

On July 15, the attorney-general gave the department the following opinion relating to the now famous drinking cup order of the State Board of Health, made at its quarterly meeting in March, and which is as follows:

AUTHORITY OF BOARD OF HEALTH, DRINKING CUPS ON TRAINS.

"JULY 15, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, State House:

"DEAR SIR—Several weeks ago a letter from your department concerning the question of the right of the Board of Health to make certain regulations with regard to common drinking cups on railway trains was received, but for some unaccountable reason was mislaid in some of the mail and has not received the attention it deserves.

"On a very careful examination of the matter, I find that the legislature, in the enactment of chapter 379 of the Laws of 1907, conferred full power upon the Board of Health as to all the matters mentioned in your letter. In that chapter, as you state in your letter, the legislature gives the Board power to 'obstruct and prevent not only the introduction of infectious diseases into the state, but also to obstruct and prevent the spread of infectious or contagious diseases into or within the state, to inspect and disinfect traveller's baggage, places and things, suspected of transmitting dangerous infectious diseases to or within the state.'

"Now a common drinking cup is one of the things subject to inspection, and if the Board in the exercise of an honest discretion finds that it is such a thing as is liable to transmit a dangerous infectious disease, it may be abolished, or in the language of the law, 'obstructed and prevented.'

"As this is the latest expression of the legislature on this subject, it is clear that it is intended that all trains and train service should be placed within the supervision of the Board of Health, regardless of any regulations placed in the hands of the Board of Railroad Commissioners by former laws.

"The above makes it almost unnecessary to answer your second question, as to the right of the Board to require disinfection of passenger cars at stated intervals, and other reasonable regulations to insure cleanliness and to prevent dangerous or infectious diseases being communicated in passenger coaches in this state. That you have such power does not admit of serious doubt, and I deem it the duty of the Board to make these provisions effective to protect the health of travellers and other people of the state by the exercise of sound discretion.

"Your correspondence is herewith returned.

"Very truly yours,

FRED S. JACKSON, *Attorney-general.*"

Immediately after receiving this opinion, the regulation was published in the official state paper under date of July 20, 1909, whereupon the following letter was transmitted to all the railroads doing business in Kansas, together with the Pullman Company.

"JULY 24, 1909.

"*Mr. A. L. Mohler, Gen. Mgr., Union Pacific R. R., Omaha, Neb.:*

"DEAR SIR—At the regular quarterly meeting of the State Board of Health, held March 31, 1909, a resolution was unanimously adopted, abolishing the so-called common drinking cup, a copy of which regulation is herewith enclosed.

"Pending a decision of the attorney-general as to whether or not such action of the State Board of Health was legal, the resolution was not published in the official state paper until July 20. The resolution having been made and published in accordance with chapter 379 of the Session Laws of 1907, it is therefore in full force and effect. I desire to have your company's hearty coöperation in the enforcement of this regulation upon the date fixed, namely, September 1, 1909.

"I desire, also, to call your attention to chapter 122 of the Session Laws of 1909, a copy of which is herewith enclosed. I desire to especially call your attention to sections 2, 3 and 5, and in accordance with section 3 this department herewith requests that a cuspidor be provided for each seat in each smoking car and smoking compartment of a car operating in this state. The department holds that a handful or two of moist sawdust used to sweep a car while in transit or the mere moistening of a broom before sweeping such car will not comply with the provisions of section 2. A sufficient quantity of moistened material of some sort that is approved by your company should be used in order that a cloud of dust may not be raised about the heads of the passengers, if the cars are swept in transit.

Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

A communication was also addressed to the secretary of each state board of health in the United States, advising them of the action of the Board, and which is as follows:

"July 26, 1909.

"*To the Secretaries of the State Boards of Health:*

"DEAR DOCTOR—I am enclosing you herewith a copy of a resolution adopted by the Kansas State Board of Health at the quarterly meeting held in March.

"Pending a decision as to the legality of such regulation as contemplated by the resolution, the promulgation of the same was delayed. A decision was recently given, to the effect that the Board has the power and authority to make such a regulation, and it was its duty so to do, if the public drinking cup was found to be a medium for the dissemination of infectious diseases.

"The resolution has been regularly published in the official state paper and copies of the same sent by registered mail to every railroad company operating in the state, and the state superintendent of public instruction, and the heads of the state and private educational institutions.

"We sincerely hope that other state boards may coöperate in this matter to the end that the common drinking cup may be abolished throughout the United States.

"Cordially yours, S. J. CRUMBINE, M. D., *Secretary.*"

The following letters from the various state boards of health are indicative of the sentiment which seems to prevail throughout the country concerning the abolishment of the common drinking cup nuisance.

"JACKSONVILLE, FLA., July 31, 1909.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"MY DEAR DOCTOR—I am in receipt of your circular letter of the 26th instant, inclosing a copy of a resolution adopted by your Board in regard

to the common drinking cup and which is said by the legal authority of your state to be practicable and lawful under the statutes of the state.

"The state board of health of Florida will very shortly revise its rules and regulations under the permission of an enactment passed by the last legislature, in April of this year, giving authority to formulate a sanitary code for the correction of certain supposed sanitary defects, and it is proposed to incorporate this feature in the new rules.

"I am obliged to you for your kindly remembrance of this office.

"Yours very truly, JOSEPH Y. PORTER, *State Health Officer.*"

"BALTIMORE, MD., August 3, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR DOCTOR—I have at hand your letter of July 26th, inclosing copy of the regulations passed by the Kansas State Board of Health in reference to the use of common drinking cups in railway trains, schools and institutions. In accordance with your request these resolutions will be referred to the board at the next meeting.

"Yours very truly, MARSHALL LANGTON PRICE, *Secretary.*"

"OAKLAND, NEB., July 29, 1909.

"Dr. S. J. Crumbine, Secretary, Topeka, Kan.:

"DEAR DOCTOR—Your letter of the 26th, inclosing the order of the Kansas state board for the abolishing of the common drinking cup. I thank you for a copy of this order by your board and shall present same at the next meeting of the Nebraska State Board of Health. We have taken the matter up, in fact did so immediately upon receipt of your first letter in regard to the matter. Nearly all of the roads operating in and through Nebraska express their willingness to adopt the suggestion. Our main difficulty at present is to get the board proper to officially pass on the question. I think that we will succeed in the end, even if we have to put up a big fight.

"I noted in a newspaper article the other day, that the great Pennsylvania railroad system had discarded the common drinking cup on their trains and are also furnishing the individual paraffin drinking cups to their passengers without extra charge. This, without orders or instructions from any commission or board of health whatever.

"Yours respectfully,
E. J. C. SWARD, *Secretary.*"

LANSING, MICH., July 30, 1909.

"S. J. Crumbine, M. D., Secretary State Board of Health, Topeka, Kan.:

"MY DEAR DOCTOR—Yours of the 26th inst., inclosing copy of resolution adopted by your State Board of Health, received, and I wish to commend the action of the Kansas State Board of Health in taking this advanced step looking to the protection of the public in the common drinking cup. I believe it is a step in the right direction, and I believe the courts will sustain your action, provided it should be contested.

"I shall bring this matter before our state board at its next regular meeting and shall urge a similar action by our board.

"Trusting you may be successful in enforcing the same throughout your state, I am,

Very truly yours,
F. W. SHUMWAY, *Secretary.*"

"ST. PAUL, MINN., July 31, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"MY DEAR DOCTOR—Yours of July 26th received with resolutions relating to the common drinking cup. I think you are on the right track. Sentiment should be directed against such a drinking cup wherever it is found, not simply the drinking cup on the cars. I will be pleased to learn of any further action of your board or of the courts in this matter in your state for I want to bring the subject before our own board at its next meeting, early in October.

Very truly,
H. M. BRACKEN, *Executive Officer.*"

"MADISON, WIS., July 30, 1909.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR DOCTOR—Your communication of the 26th inst., with copy of resolutions received, and we thank you for the same. We are pleased to learn that a decision by the proper authority has been rendered giving the board of health of your state power to issue such an order. We will look forward with interest for the results of such a resolution or ruling of your board and feel that in Wisconsin we will be able to take up some similar proposition in the very near future.

"We are endeavoring to establish a plan by which the railroads doing business in this state will establish a method by which individuals who may desire to obtain at a small fraction of cost, individual drinking cups, may do so.

"We believe the educational factor of a plan of this kind would assist us in working to the complete abolishment of the common drinking cup.

"With best wishes for your success, and we shall be pleased to hear from time to time concerning the workings of this order.

"Very truly yours,

C. A. HARPER, *Secretary.*"

PROVIDENCE, R. I., August 16, 1909.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR DOCTOR—Allow me to congratulate you upon your ruling in regard to the use of the common drinking cup in railway trains. If we can induce the railroads here to simply put in the penny slot machines I imagine it would be about as far as we can get at the present time. It should be an interstate regulation and thereby save many states the difficulty of obtaining proper laws and also avoiding the excuse that the laws of Kansas do not go beyond its borders.

"Yours truly,

GARDNER T. SWARTS, *Secretary.*"

"HELENA, MONT., July 31, 1909.

"*Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:*

"DEAR DOCTOR—I am in receipt of your favor of the 26th inst., inclosing copy of resolution in regard to drinking cups. I certainly indorse this resolution, but would suggest that if it be within the power of the board that the order further provide that corporations, school boards, etc., shall supply individual cups for use of passengers, pupils, etc. These cups, as you know, can be supplied at a very small cost by using the paraffin cups.

Yours very truly,

T. D. TUTTLE, *Secretary.*"

A communication was also addressed to the state superintendent of public instruction and the state educational institutions and all private schools of which we could find an address. The following circular letter issued by Superintendent Fairchild to county and city superintendents and boards of education throughout the state indicates that this information was quite generally disseminated.

"TOPEKA, August 6, 1909.

"*To County Superintendents, City Superintendents and Boards of Education:*

"GENTLEMEN—The following resolution adopted by the State Board of Health is presented to you for your information:

"'WHEREAS, It has been repeatedly demonstrated that the use of what is usually known as the common drinking cup is dangerous, and is an undoubted source of communication of infectious diseases, now, therefore, in the interest of the public health,

"'Be it ruled by the Kansas State Board of Health, That the use of the common drinking cup on railroad trains, in railroad stations, in the public and private schools and the state educational institutions of the

state of Kansas is hereby prohibited, from and after September 1, 1909.

"No person or corporation in charge of or control of any railroad train, or station, or public or private school, or state educational institution shall furnish any drinking cup for public use, and no person or corporation shall permit on said railroad train, or station, or at said public or private school, or state educational institution, the common use of the drinking cup.

Very truly yours,

E. T. FAIRCHILD, *State Supt. Public Instruction.*"

The following letters from the various railroads doing business in this state are herewith appended as a part of the report and to complete the history of the common drinking cup campaign.

"PITTSBURG, KAN., August 9, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—I have your communication inclosing recent rulings of the State Board on the drinking-cup question. We shall coöperate absolutely with the state board in this matter, and shall remove the drinking cups from our interurban cars on September 1st.

"We have only had three cuspidors in each smoking compartment of our cars. I shall, however, provide one for each seat, and the order has gone forward for the same.

"Regarding the notices prohibiting expectorating in cars, beg to say that I am having the printer print these. Will have them framed and fastened to the partition in each end of our cars. I should like very much to have the liberty of placing your name at the bottom of these notices.

"We are bothered a great deal by the spitters. As you know, we have to contend with the foreign element and it is exceedingly hard to get them to understand what is wanted.

"Yours very truly,

R. W. HORN, *General Manager.*"

"ST. LOUIS, Mo., July 31, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—I beg to acknowledge receipt of your letter of the 24th and copy of the resolutions abolishing drinking cups in our cars and stations, effective September 1st, and will be governed accordingly. Also, will have attention given to the other matters you mentioned.

"Yours very truly, C. R. GRAY, *Vice President.*"

"CHICAGO, July 28, 1909.

"Mr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—This to acknowledge receipt of your letter July 24th, calling attention to the abolishment of the so-called common drinking cup under resolution as adopted by the State Board of Health, and also to certain laws in force relative the furnishing of cuspidors in smoking cars and the sweeping of coaches *en route*. This company will endeavor to coöperate in the enforcement of these requirements. It was decided some time ago to arrange a trial use of the sanitary paper drinking cups, and as soon as we can make satisfactory arrangement this will be done.

"Truly yours, H. U. MUDGE."

"KANSAS CITY, Mo., July 30, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—Your favor of July 24th, to Mr. Dickinson, general manager, has been referred to us for answer. As to all of the subjects mentioned in your letter, except that relating to the drinking cups, we are conforming to the suggestions you make. Upon the subject of the drinking cup we apprehend the course to be pursued will be determined by that adopted by the larger companies. Whenever some practical method is devised for handling the matter the Orient company will endeavor to comply with and follow it. Truly yours,

JOHN A. EATON, *General Solicitor.*"

"ST. LOUIS, Mo., August 14, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—Your favor of 24th ultimo, announcing the passage by the State Board of Health of Kansas of the resolution directing the discontinuance of the use of the common drinking cup in the trains and at the stations of all railroad companies in the state of Kansas, was duly received. This company will arrange, beginning September 1, 1909, to comply with the ruling of the Board in this respect.

"The other matters covered by the state law, to which you refer in your letter, namely, the provision of cuspidors in smoking cars, and smoking compartments of coaches, together with the suggestions as to moist sweeping of cars in transit, will receive proper attention.

"Yours truly, A. W. SULLIVAN, *General Manager.*"

"TOPEKA, August 13, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—This will acknowledge receipt of your letter July 23d inclosing copy of resolution adopted by the Board of Health relating to the abolishing of the common drinking cup in railway stations and on railway trains in Kansas. Pursuant to this resolution, I have arranged to have the use of the common drinking cup discontinued at all of our stations in Kansas and on our trains operated in and through Kansas commencing September 1, 1909.

"I also have the copy of chapter 122 of the Kansas Session Laws of 1909 which you sent with your letter. Our rule regarding the sweeping of cars in transit requires the use of a sufficient amount of wetted sawdust to prevent dust being raised. This will be followed up so as to affect a strict compliance with the law. It has been our practice to furnish a cuspidor for every other seat in our smokers, but pursuant to your request we will furnish a cuspidor for every seat of each smoker and smoking compartment of cars being operated in Kansas.

"Yours truly, J. E. HURLEY, *General Manager.*"

"ST. LOUIS, Mo., September 7, 1909.

"S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—In compliance with the resolution of the State Board of Health, we have withdrawn from our trains and depots in Kansas the public drinking cup and posted notices to the effect that this action is taken in compliance with the order of your honorable body and that hereafter all parties must provide their own drinking cups.

"Yours truly, A. A. ALLEN, *General Manager.*"

"OMAHA, August 26, 1909.

"Hon. S. J. Crumbine, M. D., Secretary State Board of Health, Topeka, Kan.:

"DEAR SIR—I enclose herewith, for your information, copies of circulars in regard to the abolishment of public drinking cups and the act prohibiting expectorating on railway cars, etc.

"Yours truly, W. L. PARK, *General Superintendent.*"

UNION PACIFIC RAILROAD COMPANY.

OFFICE OF GENERAL SUPERINTENDENT.

OMAHA, August 23, 1909.

NOTICE.

In compliance with an order issued by the Board of Health of the state of Kansas, this company will not provide drinking cups for public use in trains or at stations in the state of Kansas, on and after September 1, 1909.

W. L. PARK, *General Superintendent.*

Approved: A. L. MOHLER, *Vice President and General Manager.*

Probably no other order or law was ever promulgated by this department which has occasioned such widespread comment, both adversely

and favorably, as this one, and probably this Board, and especially its secretary, has never been so roundly abused on the one hand, or so widely commended on the other, as has been occasioned by this new reform movement, and yet I am convinced that no public health law or rule and regulation of the State Board of Health has been so promptly and so universally complied with as has been this order.

So far as I am aware, every railroad in the state and every educational institution and the public schools are generally complying with this regulation, and I believe that within the year we will be able to demonstrate that much of the infectious disease that has hitherto been propagated in this way will have been prevented.

PENITENTIARY INVESTIGATION.

Early in July the warden of the Penitentiary made a request to this department that a painstaking investigation be made of the Penitentiary prisoners, to the end that all tubercular subjects might be definitely located so that proper separation and isolation might be made and the health of those who have not already been infected be preserved.

Accordingly, in company with Doctor Emley, a visit was made to the institution and a careful survey of the conditions as related to tuberculosis was made. Doctor Emley, assisted by the prison physician and your secretary (for one day), gave the tuberculin test to all of the 800 prisoners, also to the warden. This occupied a week's hard work, and I desire to make grateful acknowledgment to the board for the painstaking and careful investigation made by Doctor Emley.

Upon the completion of the work and the sifting of the data thus obtained the following letter was transmitted to Governor Stubbs and Warden Coddington, which as you will notice covers the work of the investigation:

"Gov. W. R. Stubbs, Topeka, Kan.:

"TOPEKA, July 29, 1909.

"DEAR SIR—This department having completed the medical examination for the presence of tuberculosis among the prisoners in the Penitentiary at Lansing, respectfully submits the following report for your consideration.

"All the prisoners were tested by instilling one drop of a 1-per-cent solution of tuberculin into the eye. This test causes no pain in the normal eye in the healthy individual and only a fleeting irritation of the lids in the tuberculous person. All eyes were examined carefully for inflammatory or other conditions that would contra-indicate the advisability of using tuberculin and all those who showed any indication that excessive reaction, pain or harm to the eye would follow were not tested.

"Five men were not tested for the above reasons, and these were searchingly examined physically whether or not their appearance indicated tuberculosis.

"After twenty-four hours each man tested was examined, and if the reaction, indicating active tuberculosis, appeared in the eye he was stripped to the waist and his lungs and lymphatic glands carefully examined to determine the location and extent of the disease and the advisability of separating him from healthy individuals.

"No prisoner who seriously objected to the treatment was forced to take it, but out of the whole number only one man refused, which speaks well for the discipline in this institution. The man who refused is a reform school graduate into the Penitentiary and has a very low mentality.

"The following facts must be considered in the results:

—

"(a) That a man may, by rubbing or pinching the eye, produce the appearance of a positive reaction when no tuberculosis is present.

"(b) That in a syphilitic individual (of whom there are a number in the prison) a reaction may sometimes appear positive when no tuberculosis is present.

"(c) That when a person gives a positive reaction to this test there is somewhere in his body an active tuberculosis process.

"The warden and 800 prisoners were tested. The warden showed no evidence of tuberculosis past or present.

Of the 800 prisoners tested 170, or 21.25 per cent, showed the presence of tuberculosis in some form or other; the great majority, on further examination, showed very slight lesions. This number is somewhat more than double the number that would be found among 800 free individuals selected at random in this state.

Thirty-one of those having tuberculosis are in such a stage of the disease as to be dangerous to healthy prisoners, the guards and the warden's family.

Classified as to sex and occupation, the following facts appear:

	<i>Per cent.</i>
Of 21 criminal insane, 11 are tuberculous.....	52
Of 39 women, 12 are tuberculous.....	31
Of 7 men in tuberculous tent, 5 are tuberculous.....	71
Of 13 men in laundry, 5 are tuberculous.....	38
Of 63 tailors, overall makers and shoemakers, 19 are tuberculous...	30
Of 28 firemen, 8 are tuberculous.....	28
Of 59 brick-yard men, 17 are tuberculous.....	28
Of 234 below-ground miners, 42 are tuberculous.....	18
Of 80 farmers, teamsters, yard men, road men and errand men, 14 are tuberculous	17½
Of 40 tinnerns, blacksmiths and tinker-shop men, 7 are tuberculous..	17
Of 19 engineers and mechanics, 3 are tuberculous.....	16
Of 56 cooks, bakers and kitchen men, 8 are tuberculous.....	14
Of 37 clerks and cell-house men, 5 are tuberculous.....	13
Of 40 masons, quarry men, carpenters and painters, 4 are tubercu- lous	10
Of 38 top miners, 3 are tuberculous.....	8
Of 26 miscellaneous, 9 are tuberculous.....	27

Of the whole number (170) affected, 22 had tuberculosis of the lymphatic glands, some of whom also had the disease in the lungs.

Of the 155 showing tuberculosis of the lungs, only 31 are serious enough to be dangerous to others. The remaining 124 are only slightly affected and are not coughing or giving off the infectious material.

It is observed that the greatest percentage of infected persons is among the criminal insane and the women. Both these classes are closely confined, with less sunshine and pure air than the others and with little or no physical exercise or occupation.

The high percentage among the laundry men may be due to the steamy air and the handling of soiled clothing, or it may be accidental because of the small number from which the percentage is deduced.

It is noticeable that the tailors, overall men and shoemakers also have the high rate of 30 per cent, due doubtless to the close confinement and occupation.

The high rate among the firemen and brick yard men is probably due to the dust that both necessarily inhale and the abnormal temperatures to which they are subjected.

Among the miners it will be observed that the deep miners, where one would expect a high rate, the per cent is not abnormally high, while the top miners are freer from tuberculosis than free people in ordinary walks of life.

The men about the kitchen are comparatively free from tuberculosis because the warden has been replacing sickly individuals with those who

appeared well. As a consequence there is not a dangerous individual in this department.

Taking all together, it is seen that the outdoor workers are not only freer from tuberculosis but healthier in every other way than those who work indoors or those who are closely confined without exercise or work.

The low percentage among the deep miners in comparison to the miners for private corporations is doubtless due to the sprinkling in the runways and the pumping in of pure air.

Among the tuberculosis patients in the tent is one man who does not show the disease at this time and another paralytic who is at present free from the disease.

The tuberculosis tent is centrally located in the prison yard in proximity to the warden's home, the chapel, dining room and kitchen.

In consideration of the foregoing the following suggestions are respectfully offered for your consideration:

1. That the south room of the top floor of the old furniture factory be fitted up for the segregation of those who are now disseminating the disease.

2. That the tuberculosis tent be moved from its present locality at once.

3. That you approve the warden's plan to put all the tuberculous cases who are not kept in the tuberculosis hospital, and who are not likely at the present time to spread the disease, in the lowest cells in one cell house, where they can be better kept under observation, and dangerous cases segregated as soon as they appear.

4. That the high efficiency and health of the miners be guarded: (a) By taking *all* cases out of the deep mines and replacing them with healthy men *only*. (b) By using a one-half of one per cent solution of carbolic acid for sprinkling the runways once every thirty days.

5. That it is better to make provision for a vicious tuberculous person inside the Penitentiary than to turn him loose to spread the disease in an innocent and unsuspecting community.

6. That money spent now for the prevention of this disease in the Penitentiary will: (a) Tend to prevent other diseases by making the prison as a whole more sanitary. (b) Conserve the health of the prisoner and his family and friends after his release. (c) Yield large returns by increasing the efficiency of the workmen and the consequent pecuniary gain to the state.

Very respectfully,

S. J. CRUMBINE, M. D., *Secretary*.

The following letter was also addressed to the warden concerning some needed changes in the water supply:

"Mr. J. K. Coddington, Warden, Lansing, Kan.:

"JULY 17, 1909.

"MY DEAR MR. CODDINGTON—Under separate cover, I am sending to your physician a number of sputum cups and sputum-cup fillers to be used by your tubercular patients who are coughing and spitting. I would urgently recommend that the cuspidors be abolished from the tuberculosis tent and that these sputum cups be used in lieu thereof, the lid of which kept closed prevents the flies getting access to the sputum.

"I would recommend that the hog feeding lot situated at the base of the water reservoir be removed to some other place, a sufficient distance from the reservoir as to prevent pollution of the water by the dust and powdered filth from the pens being blown into the water during high winds from the north and northwest and which must inevitably occur so long as the present arrangements exist.

"With the abundance of hill land unsuitable for cultivation at your disposal, there seems to be no reason for the placing of these hog lots immediately next to your water reservoir.

"I think also that it is a matter of very great importance that additional points be sunk for water supply in order that the open wells from which a portion of the supply is now gathered may be abandoned, as they are a constant source of danger, as well as trouble and expense dur-

ing times of high water, also, as now obtains in the Missouri river valley, which conditions pollute the entire supply, rendering it unsafe for domestic purposes.

"With a comparatively small outlay the water supply of the institution could be rendered safe and adequate for all time to come; and what is of greater value than a wholesome water supply? Surely this should receive the board's early and serious attention and sufficient money be appropriated to put down additional points, using the open wells only in case of emergency.

"It is further recommended that your sand filter be operated so as to cleanse the same once daily, so long as the polluted river supply is being used. After the supply comes from unpolluted sources, it is not necessary to do this cleansing so often.

"I trust that you will insist on every inmate of the institution receiving the tuberculin test in order that you, as well as we, may have definite knowledge of the actual condition and then may proceed with an intelligent understanding as to what is necessary to be done to meet the actual conditions.

"If the test is only made on a part of the inmates, I shall always feel as if we are working in the dark, with the problem only partially solved, and with only sufficient information to make a fairly good guess as to what should be done in the future.

"Dr. Emley can stay with you as long as it is necessary to complete this examination. In conclusion, I want to express my gratification in the sane and businesslike way in which you are taking hold of the great problem before you.

"I desire to also remark that it is exceedingly refreshing to find a layman so alive to the tuberculosis problem and the importance of the exclusion of the fly from places and things where food products are prepared or served. The governor should not, and I believe will not, look any farther for a warden for the penitentiary. Kindly convey my personal regards to your family.

Cordially yours,

S. J. CRUMBINE, M. D., *Secretary.*"

I have since received assurances from the warden that the suggestions contained in these two letters will be carried out to the very best of their ability and to just such an extent as their appropriations will admit.

On July 16th, the following letter was addressed to the county boards of health, which, as you know, are the boards of county commissioners. This letter was thought to be necessary because of the fact that the average county board of health has little knowledge or appreciation of the important duties of the county health officer as now required under our present health laws. Unquestionably this official is the most important county official within the confines of their respective counties, and it was for this reason, and for the purpose of bringing the county board of health and the health officer together in more cordial relations, that the letter was written. I have reason to believe that it was instrumental in bringing about the desired results in many instances, although I regret to say that in some instances such was not the case.

"July 16, 1909.

"To the Honorable Board of County Commissioners:

"GENTLEMEN—The last legislature passed several important laws relating to the public health, and incidentally very greatly increased the responsibility and work of the county health officer. The new law requiring reports of all cases of tuberculosis by the attending physician to the county health officer, the return of the procedure blank to reporting physicians, the recording of the same in a book of record, the requisition for supplies and reporting of the case to this department, the disinfection

of the premises at public expense after termination of case by recovery or death, the drawing of the order of \$1.00 in payment to physicians who comply with certain requirements of the law in the matter of prevention, all of which is specifically provided for in the law, will take much of his time and considerable postage, in the more populous counties of the state.

"Another important measure is the hotel inspection law, which provides that the local health officer shall be an inspector of hotels. This inspection will be required at least semiannually, with report of such inspection to this department, on blanks for that purpose.

"A third new law makes the local health officer an inspector of barber shops, and cards for posting in all shops in your county will soon be sent to him, and the inspection ordered.

"Under a former resolution of the State Board of Health, county health officers are required to make semiannual inspections of all slaughterhouses and meat markets, and see that the law is faithfully observed, also to annually oversee or direct the annual disinfection of all schoolhouses at some time during the summer vacation, and to inspect the source of water supply, and the sanitary condition of the privies, etc., the disinfection to be done by or at the expense of the various boards of education.

"These various duties together with his duties under the general health laws, of quarantine, recording births and deaths, and making reports to this office monthly and annually, call for much time, skill, and intelligent application to the work in hand, and a scientific knowledge of the up-to-date methods of prevention.

"We trust that you will afford every means and opportunity for your health officer to put into effective operation these various laws in the interest of the public health and that a reasonable compensation be allowed him for this work, and that the old practice, which obtains in quite a few places yet, of awarding this important office to the lowest bidder, or to one with a political pull, be abolished and physicians selected because of special fitness, for the health officers of this state. I desire to direct your attention to chapter 102 of the Session Laws of 1909, providing for his appointment, requiring him to give bond, and providing for penalties and his removal from office by the State Board of Health for refusal or neglect to do his duties.

"It is respectfully suggested that your honorable board meet and organize as a county board of health, if you have not done so, and that at all future commissioners' meetings you meet as a county board of health, with your county health officer, for such time as may be necessary to properly oversee and direct the sanitary conditions of your county.

"Cordially yours,

S. J. CRUMBINE, M. D., *Secretary.*"

On July 29 the following letter was sent to the Kansas fair associations:

"TOPEKA, July 29, 1909.

"KANSAS FAIR ASSOCIATIONS—The department desires to call the attention of the management of the various fair associations to chapter 230 of the Session Laws of 1909, and the rules and regulations adopted by the State Board of Health for carrying out the provisions of the act, which will be found on page 30 of booklet herewith inclosed.

"Your attention is especially directed to regulations 1, 8 and 11. All places, stands, wagons or vehicles in which or from which foods or drinks are sold, offered for sale or prepared, must be maintained in a strictly sanitary condition.

"Toilets should be of sufficient number and size as to properly care for the maximum crowd expected, and must be disinfected and cleansed daily. They should be sufficiently removed from places where foods are sold, as not to be a menace to such food supplies by flies going from one place to the other.

"Unwholesome or fake foods or drinks will not be permitted.

"The inspectors of this department expect to visit every fair in Kansas this year, and we venture the hope that there may be no cause for complaint to the department.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

A partial inspection of the fair associations last year convinced me of the desirability and necessity of very great changes in the toilet arrangements and the location and conduct of eating booths and drinking places. Accordingly the entire inspection force has been detailed to do special duty in making a personal visitation and inspection of every fair that has thus far been held in the state this year. They report a marked improvement over the conditions last year. Although there is great room for further improvement, yet we believe a genuine service has been rendered to the gathered thousands at these places of recreation and amusement.

ANTERIOR POLIOMYELITIS.

During my absence the department was notified of a number of cases of acute anterior poliomyelitis occurring at Norcatur in Decatur county. Immediately upon my return, the matter was brought to my attention, and at the earliest possible date I made a visit to the stricken community. I found that some fifty cases had occurred in Norton and Decatur counties, covering a wide range of territory, scattered both in the country and in the towns of these two counties. After several days of painstaking investigation, I was unable to arrive at any conclusion as to the cause or source of this infectious disease. Orders were left with the county health officers of these two counties to thoroughly disinfect, at public expense, all places and things where a case had occurred, and to not permit any members of the family where a case had occurred to attend the public or private schools until after such disinfection and two weeks had elapsed. Dr. Skoog of the University Medical School was then sent to Norcatur for the purpose of obtaining a sample of blood, feces, and urine for bacteriological purposes, in the hope that it might be the good fortune of Kansas to find out and definitely determine the nature and kind of micro-organism which seems to be the cause of the disease. In the meantime, I am collecting a careful case report of each case that has occurred, together with complete family history, the social conditions, the source of food, water and milk supply, and such other data as can be collected, with numerous photographs of cases, which together with Doctor Skoog's report will be written up at some future date and published in the BULLETIN of the State Board of Health, in the hope that the history of the Kansas epidemic may make an important contribution to the subject of this disease which is so little understood by the medical world. At the next quarterly meeting, I expect to make a more detailed and scientific report of this epidemic.

FOOD AND DRUGS.

The work in the food and drugs department has been progressing satisfactorily. The inspectors are doing good work, and the laboratories at the Agricultural College and University have been enlarged and are capable of handling a large amount of work during the coming year.

I have to report that the third action taken under the national food and drugs law has been brought to a successful conclusion. A carload of vinegar was seized under the liable and condemnation clause of the national act, at Wichita, Kan., and the United States district court rendered a decision in favor of the department.

WATER AND SEWAGE.

The work in the division of water and sewage is constantly on the increase, until we find that even Professor Hoad (with his enormous capacity for work), as well as myself, have been quite overwhelmed with the work in this division and have been utterly unable to take up the work as promptly as we would desire, on account of our physical incapacity to do so. The investigation of the natural waters in southeastern Kansas has for this reason been delayed, but we trust that it may be taken up at a very early date and the other work that is now before us brought up to date as nearly as is possible.

BARBER LAW.

The rules adopted by the Board for the sanitary conduct of barber shops and bathhouses have been printed and forwarded to the various county and municipal health officers, with a letter of instructions advising them that these places should immediately be inspected and the cards posted. This order has been effectively carried out in some counties, indifferently carried out in others and not carried out at all in still others, all depending upon the personality and convenience of the various health officers. Take, for instance, in the city of Topeka, there has nothing been done with the inspection and no rules have thus far been posted. It is not at all likely that a law of this kind will meet with any better enforcement than any similar law, or rules, which enforcement is almost entirely dependent on a system of inspection, and that inspection can hardly be expected unless there is some person specifically paid for such work.

TUBERCULOSIS.

On August 23d the exhibit made its debut at Holton. The following towns have been visited since that time: Holton, Horton, Troy, Atchison. Valley Falls, Oskaloosa, Leavenworth, Tonganoxie, Seneca and Hiawatha.

I am glad to advise you that at every place the exhibit has been very largely attended when the population of the place is taken into account, with the single exception of the city of Atchison. At that place the exhibit was a dismal failure, so far as attendance was concerned. Doctor Emley, the lecturer, and Miss Neiswenger, the nurse, are to be commended for the hard work they are putting in to make these daily exhibitions a success and inform the public on the fundamentals of tuberculosis control and prevention.

HOTEL INSPECTION.

The amount of work put on this department by the new hotel inspection law is beyond the comprehension of any person excepting those associated with the work of the office. This has added so enormously to our labors that I am convinced that it requires a separate report to the Board and I have asked Mr. Deacon to make a report on this special work.

The assistant inspector has shown rare judgment and skill in handling this complicated and vexatious question and I am glad to give public acknowledgment of this fact at this time.

Respectfully submitted. S. J. CRUMBINE, *Secretary.*

MINUTES FIRST QUARTERLY MEETING.

SEPTEMBER 28, 1909.

The first quarterly meeting of the State Board of Health was held in the office of the secretary September 28. The meeting was called to order at 1:30 P. M., Vice President Coburn in the chair during the temporary absence of the president.

Upon roll call all the members of the Board were present excepting Dr. J. R. Scott and Mr. C. D. Welch. Of the advisory board Prof. W. C. Hoad and Prof. F. O. Marvin were absent.

The minutes of the last quarterly meeting were then read and approved and ordered placed on file.

The secretary's report was then presented, and upon motion ordered placed on file.

Following this report Assistant Chief Inspector Deacon made a supplemental report upon hotel inspection.

The secretary's report was then discussed, particularly that portion relating to the epidemic of anterior poliomyelitis, in which members were much interested. The Board authorized the secretary to use such an amount of the emergency fund as seemed to be necessary for the study and control of the disease, which fund will be available upon the approval of the governor.

A committee of barbers being present, they were called upon to present their views concerning the advisability of a system of inspection and licensing under the new barber law. The secretary then presented a resolution adopted by the state federation of labor, which is as follows:

"Be it resolved, By the third annual convention of the Kansas State Federation of Labor, that we indorse the plan of appointing a chief barber inspector, to be a member of the advisory board of the State Board of Health, and the appointment of an inspector in each congressional district, with power to inspect barber shops, barber colleges and bathrooms, and examine barbers and issue license to such barbers to practice the profession of barbering in Kansas, and collect sufficient fees from those examined to defray the expenses thereof, all under the law authorizing the secretary of the State Board of Health to make such inspections and to make rules and regulations governing the same."

After further discussion by members of the Board, a motion was presented authorizing the president to appoint a committee of three members of the Board and three barbers, to present a definite plan for barber inspection to be submitted to the attorney-general for his opinion as to its legality, and if such would meet his approval to be presented at the next quarterly meeting of the Board in December.

The recommendation of the secretary that the Board provide diphtheria antitoxin for the poor of the state, the same to be paid for out of the emergency fund, was then approved by the adoption of the following resolution:

Resolved, That the secretary is hereby authorized to purchase and distribute diphtheria antitoxin to the poor of the state in such way and manner, and under such restrictions, as he may think proper, and that such sums of the emergency fund as are necessary be appropriated for that purpose.

President Lerrigo then assumed the chair, and Doctor Coburn made a verbal report of the epidemic of typhoid fever in Kansas City, Kan.

A resolution adopted by the state W. C. T. U. concerning the unsanitary condition of toilets in railway stations was then presented, and upon motion the secretary was instructed to submit the same to the board of railroad commissioners.

Professors Bailey, Sayre and Willard and Dr. Greenfield then made verbal reports of the work of their various departments.

The secretary then read a communication from Dr. A. L. Skoog, who had been sent to the Norton-Decatur infected district for the purpose of studying the epidemic of anterior poliomyelitis. Dr. Skoog's report is as follows:

September 27, 1909.

Dr. S. J. Crumbine, Secretary State Board of Health, Topeka:

DEAR DOCTOR—I herewith submit a report on the investigation of the present epidemic of acute anterior poliomyelitis in Norton and Decatur counties, to which work I was assigned by the Kansas State Board of Health on September 21, 1909.

I departed from Rosedale on September 21, 1909, made a stop in Topeka for further instructions from the State Board of Health office, and on the same day continued my journey to Norcatur, which was reached about noon the following day. An acquaintance of all the physicians of the town was quickly established and arrangements made to see several cases belonging to the epidemic. The chief portion of the afternoon was occupied in making an examination of the latest developed case of the

disease, located in a country home eight miles east of Norcatur, in Norton county. The report on this follows:

Case F. E.—The parents of this patient are fairly intelligent and furnished a likely accurate history of the illness and offered no objection to a complete physical and neurological examination.

Anamnesis: Mother has always enjoyed good health. There are three living children of which the patient is the youngest. None are dead. There have been no miscarriages. Father has had asthma since the age of 18, otherwise health is fair. Nervous heredity in any of ancestors is denied.

The patient is a male child, age three. Shortly after its birth a pustular eruption appeared over the abdomen, chest and head. These skin lesions remained only a few days. Mother states that she had variola during the fifth month while pregnant with this child. The boy has had numerous "colds," always with a fever of short duration. It was a poor sleeper in infancy. He has slept well since age one. No spasms have ever been noted. Teething has been normal, the first appearing between the sixth and eighth month. The upper canines appeared at age two.

Present illness: Onset September 16, 1909. First indication of any illness noted by mother was a conjunctivitis with a moderately increased lachrymation, greater in left eye. No other symptoms were noted on this day. Appetite and sleep normal. Bowels did not move. Last stool was on the 15th and apparently normal.

September 17th. Conjunctivitis remained the same. Complained of some photophobia. The child was irritable, cross, and cried much. Mother says he was afraid to remain alone. Appetite good. No stool. There was evidence of some fever in the evening.

September 18th. The conjunctivitis began to subside. All other symptoms were increasing in severity. There was an apparent increasing fever evidenced by a flushed face and a warmer skin than normal. A frontal and occipital headache was present in the morning. Also some rigidity of the neck muscles. Some pain and tenderness was present over the lower abdomen. No bowel movement. Slept some during the day. Vomiting occurred in the evening. The child was up and able to walk as usual during the morning. The first indication of paralysis was noted in the evening, at which time the child was unable to walk, or even lift the feet off the ground when supported, right probably weaker than the left. No paralyses were noted in the upper extremities.

September 19th. Febrile state seemed to be improving. Patient sat up in bed, laughed and played with other children. Appetite improved. Conjunctivitis has completely subsided. Power of motion in left leg was slight at hip, knee, ankle and toes. No motion was possible in the joints of the right leg except at toes.

September 20th. Patient seemed quite bright in the morning. At 11 A. M. Dr. Koory of Norcatur was called in to see the case. He found a temperature of 101° F. and pulse rate of 110. Child complained of pain over the right hip joint several times during the day. Bowels moved in the evening.

September 21st. There were three bowel movements in the evening following an enema. Some difficulty in initiating micturition was ex-

perienced. Temperature seemed normal. Some pains were present in the right leg. Paresthesias were complained of by the patient who volunteered the following remark: "Flies are crawling on my knees" (bed clothing covered him). "There are mites in my toes." "Scratch my knees." Right and left toe movements, but no others of legs.

September 22d. Child seemed about the same. Complained of pain when the legs were moved.

September 23d. Patient passed a restless night. Slept all morning. I saw the patient at 3 P. M.

Examination, physical: Patient has the appearance of a robust, well-developed child. Lungs and heart are normal. Arteries are full. Pulse rate is 106, respirations 24, and temperature 99°. The skin over the lower extremities feels colder than that of the upper. Abdomen shows much tympany and is painful to slight pressure especially below the umbilicus. Mental condition is normal. The child objects to being examined. The function of all the cranial nerves is normal. The motor fifth, seventh, ninth, tenth, eleventh and twelfth showed no paresis.

Motor system: Range of motion and power for all muscle groups in the upper extremities and chest are good. There is much rigidity of the neck muscles but no weakness. Weakness of the abdomen first becomes evident in the muscles supplied by the ninth dorsal cord segment and increases in the descending nerve distribution. No voluntary movement can be produced in the right leg at the hip, knee or ankle. A little flexion and extension of the toes are present. A slight movement in the left leg can be produced at the hip, knee and ankle, and a greater amount at the toes. Passive movements of the lower extremities and pelvis promptly cause a complaint of pain. The child refuses to assume a sitting posture. Reflexes: Jaw jerk is present. Biceps, triceps and supinator are present, right equals left. Knee jerk and ankle jerk are absent on right and left. No Babinski or Oppenheim phenomena. The superficial epigastric reflex is present, right equals left. The abdominal reflexes are absent below the umbilicus. Right and left cremasterics are abolished.

Sensation: All forms of sensation are everywhere present. There is no abnormality except a questionable hyperesthesia over the lower extremities.

This case, which is in the terminal period of the febrile stage, might still have furnished some body fluids which could have been used to attempt to discover the exact etiology of this rather uncommon but serious malady. With this fact in view I asked the father for his consent to perform a lumbar puncture, and take a little blood for laboratory analyses. He readily assented and arrangements were made to do this on the following day. The father telephoned the attending physician on the morning of September 24th, and said they had decided to not permit us to take any cerebro-spinal fluid or blood from his child. At this time I was out visiting another patient, a victim of the same epidemic. Being informed of the situation on my return, I at once phoned the gentleman, tried to induce him to permit the simple procedures for obtaining the fluids, but received a definite reply of "No." He was determined on this point.

An examination of the feces of this case was negative.

Drs. Kenney and Dallal of Norcatur arranged for me to see three

other cases that are now in the palsy stage. The onset in one dated from September 1st, the other two from August 14, 1909. I decided not to ask for any blood or cerebro-spinal fluid from these patients. Their stages of the illness had advanced too far for the possibility of discovering any organism of a parasitic nature in the excretions and secretions of the body. Physical examinations established the fact that they were undoubted cases of acute anterior poliomyelitis. One patient has a severe left facial nerve; left arm, complete at shoulder, elbow and wrist joints, fingers partial; and partial decreasing paralysis of the lower extremities, slightly greater in the right leg. Another shows a severe paraplegia, ninth dorsal cord segment down, legs being completely flaccid and motionless. The third case presents a partial motor paralysis from tenth dorsal cord segment on right and eleventh on the left down. This patient can now walk a little when supported, which could not be done at the termination of his acute febrile stage.

Telephone communication with the county health officer at Oberlin furnished the information that no recent cases now exist in that district.

I stopped a few hours in Norton, where the physicians related the history, physical findings and course of a number of cases that undoubtedly belonged to this same epidemic. Some of the cases were unusually severe.

The cases which I examined and the data of many others furnished by the local physicians admit without a doubt the diagnosis of epidemic acute anterior poliomyelitis. I have no hesitancy in making this statement. Some cases had been diagnosed intestinal autointoxication and Landry's paralysis. I do not think intestinal autointoxication requires much consideration in a differential diagnosis. The chief ones to exclude are polyneuritis and Landry's paralysis. The mode of onset of the paralysis and subsequent course eliminates polyneuritis. Landry's paralysis is not so readily excluded especially in view of the advancing type of palsy reported by the physicians as occurring in several of their cases, and the high death rate. Neither of these symptoms are sufficiently outspoken to diagnose as Landry's. Furthermore, the true Landry's paralysis is a very rare disease and no epidemics have been reported.

SUMMARY.

The diagnosis is epidemic acute anterior poliomyelitis, apparently confined to a large portion of Decatur and Norton counties, the center of the district being in the neighborhood of Norcatur. It may extend into bordering Nebraska.

No one has demonstrated the exact etiology of the disease. The infectious theory has an increasing number of adherents. I don't think it is a gastrointestinal disorder. The gastric and intestinal symptoms can be explained by the toxemia and vasomotor disturbance attendant upon the cord disease. However, it is not unlikely that the avenue of infection is by way of the alimentary tract.

The disease is not a new one. Heine made studies and wrote of the malady in 1840. Recently Medin and Wickman have made exhaustive studies. A number of epidemics have occurred in Sweden. Epidemics have been reported from New York, Massachusetts and Vermont. Several have occurred in Austria, one during the winter of 1908-'09, at which time I saw a few of the cases in Vienna. Dr. Landsteiner of the

University of Wien performed some interesting experimental work at that time. He injected some cerebro-spinal fluid from a poliomyelitis patient into the peritoneal cavity of a macacus rhesus monkey, which produced the same disease in the inoculated animal. The autopsy on this monkey revealed the same changes in the spinal cord that occur in acute anterior poliomyelitis of the human. The disease was reproduced in a second monkey by making a similar inoculation from the first, and again verified by a post mortem section. Clinically the same motor paralyses were observed in the two monkeys as in man afflicted with acute anterior poliomyelitis. But in neither monkey was he able to find the specific micro-organism. This is a strong indication of the infectious nature of the disease, although a micro-organism was not discovered.

In view of several facts supporting the infectious theory of acute anterior poliomyelitis, I believe it would be quite proper for health authorities to consider instituting some kind of supervision over these epidemics.

May I also be permitted to ask your Board to attempt to have a few of these cases cared for at the University of Kansas Hospital at Rosedale, where they might be closely studied while at the same time receive the best therapeutic attention?

In conclusion I wish to thank the several physicians of Decatur and Norton counties for their unstinted services and aid given during my recent work in their community.

Yours sincerely,

A. L. SKOOG.

No other business appearing, upon motion the Board adjourned to the private office of the secretary where a social time was spent. At six o'clock the office force sprung a surprise on the members of the Board in the shape of a sanitary luncheon in honor of the new apartments. The zest, good cheer and fraternal fellowship manifest on every side was proof to the office force that their little surprise was highly appreciated. The senior member of the Board, Prof. L. E. Sayre, kindly consented to act as toastmaster and chief broiler, which place he filled with distinction. After an hour of a "feast of reason and flow of soul" the members departed for their various homes and hotels, expressing the sentiment that this meeting had been the best ever.

The following bills were audited and allowed:

Fund No. 8, expense of members:

Oct. 2,	E. H. S. Bailey.....	\$3 53
"	B. J. Alexander	10 60
"	V. C. Eddy	29 44
"	J. B. Carver	20 70
Oct. 5,	L. E. Sayre	3 53
"	C. H. Lerrigo	5 00
"	H. L. Aldrich	23 36
"	C. E. Coburn	12 70
"	J. A. Milligan	16 20
"	C. S. Huffman	17 55

Respectfully submitted. S. J. CRUMBINE, M. D., *Secretary*.

SECOND QUARTERLY REPORT.

December 7, 1909.

Mr. President and Members of the State Board of Health:

GENTLEMEN—Since the last meeting of the Board the work of the department has continued in the usual way, nothing of unusual importance having occurred. The volume of business, however, has gradually grown until we have been under the necessity of adding another stenographer to our working force since the last meeting of the Board.

ANTERIOR POLIOMYELITIS.

An occasional case of anterior poliomyelitis continues to be reported, the last three cases being reported as having occurred in one family at Syracuse, Kan., November 18th. These cases were taken to the University Medical Hospital at Rosedale by Doctor Skoog, whom I requested to go to Syracuse for an investigation. Up to the present time there have been about 85 cases reported to this department. The work of investigation in an effort to determine the cause and dissemination of this disease is proceeding at the hospital at Rosedale, as well as in the food and drug laboratories of the State Board of Health at the University and the State Agricultural College. Whether or not these investigations will be instrumental in discovering anything new, as yet remains to be seen. The expense incident to this investigation is being paid out of the emergency fund, as ordered by the Board at their last meeting.

TUBERCULOSIS.

As you are aware the last legislature passed a law providing for the compulsory reporting of all cases of tuberculosis by the attending physician or householder to the local board of health. After a considerable delay the blanks necessary for putting this law into execution were prepared and distributed to the various county and city health officers with directions that all physicians in their jurisdiction should be supplied with these blanks. In addition a sample set of blanks, together with a copy of the law, was sent to every physician of the state whose name and address we could secure out of the last edition of the Polk's directory. These blanks were accompanied by a circular letter, calling attention to the important provisions of the law, and making an urgent appeal to the physicians for their coöperation in its enforcement. The belief was expressed that this was one of the most important and comprehensive measures for tuberculosis control that had ever been enacted by this or any other state, and it was hoped that a prompt response would be made to this appeal, because of the necessity for its enforcement in any measures which might prove successful in tuberculosis control. I have to advise you that our hopes have been blasted and our expectations sadly disappointed. In a general way I would say that but about one-third of the physicians of the state have made any attempt to report their cases of tuberculosis. Just why this condition of affairs exists I am unable to even guess, but leave the matter to you to determine, with the recommendation that you instruct me as to what procedure in your judgment should now be undertaken to bring about the enforcement of the law.

TUBERCULOSIS EXHIBIT.

The tuberculosis exhibit has been on the road continuously since the early part of August. The interest and attendance is all that could be desired. The only difficulty has been to secure rooms or halls large enough to take care of the ever-increasing crowds that come to see the exhibit and hear the lectures. Special effort has been made in each county to secure attendance of all the school-teachers and students of the county at some time during the stay in their respective counties. This effort has been crowned with considerable success. Many of the high schools are requiring theses or essays to be written by the pupils on what they saw and heard at the exhibit, and thus the impression and information gathered has been, I trust, firmly fixed in the minds of the oncoming generation. This is my ideal of the tuberculosis campaign, as it is essentially an educational propaganda. The subjects of typhoid fever, whooping cough, anterior poliomyelitis, and general sanitation, with special reference to the fly, have been given due attention by the lecturer, and thus the exhibit takes on the aspect of a general sanitation propaganda.

WATER AND SEWERAGE.

Municipal improvement throughout the cities of Kansas continues and this division of the Board's work has occupied much of the thought and time of your engineer and secretary. Plans and specifications for waterworks for the following towns have been approved since the last meeting of the Board: Delphos, Lucas and Baldwin.

Plans and specifications for sewerage for the following towns have been approved since the last meeting of the Board: Cherryvale.

Under this division of the Board's work we have a number of difficult problems to solve, among which is that of industrial wastes which are polluting the streams of our state, some of which are used as a source of water supply, while in other instances the wastes are of such a character as to kill the fish in the streams. Early in October your secretary was called to the city of Caney, where complaint was made that the Sunflower oil refinery at Niotaze was discharging its spent sulphuric acid and oil waste into Lake creek, which finally found its way into the Caney river, the creek emptying into the Caney river a short distance above the intake of the Caney water supply. Samples of water were secured from Lake creek, Birch creek into which Lake creek flows, and Caney river water at the intake of the Caney river waterworks plant, and analyzed by the chemist for the Board, Prof. E. H. S. Bailey, giving the following results:

"PARTS PER MILLION.

"No. 3721 is from Birch creek, one-half mile from where it empties into the Caney river. No. 3722 is from Birch creek at the junction of Birch creek and Lake river.

	3721	3722
Turbidity	16	50
Total solids	640	987
Sulfate iron	227	565
Free sulphuric acid	none.	196
Organic matter	some.	much.

"Comparing these waters, it is evident that 3722 still contains much free sulphuric acid that has not been neutralized by coming into contact with the soil or the lime carbonate in the solution in the water."

It is recommended that the board authorize the secretary and engineer to issue an order to the Sunflower Oil Refinery Company, at Nio-taze, under chapter 382 of the Session Laws of 1907, known as the water and sewerage law, forbidding them to discharge their spent sulphuric acid or oil waste in such a manner as it will reach the Caney river and thus pollute the water supply of the city of Caney.

In the latter part of November the deputy game and fish warden of Coffeyville made complaint to this department that the strawboard paper mill at Coffeyville was discharging its waste into the Verdigris river, which was of such a character as to kill the fish of that stream near the point of discharge. Our engineer made a careful investigation of this complaint and will make a report direct to the board of his findings and his recommendations.

"LAWRENCE, KAN., December 3, 1909.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"DEAR DR. CRUMBINE—The following is the analysis of No. 3881, strawboard waste from Coffeyville, Kan., per W. C. Hoad, received November 19, 1909. Appearance of sample: much suspended matter, brown, slight odor of hydrogen sulphide.

Parts per million.

Turbidity	1,000.00
Nitrogen as free ammonia.....	1.09
Nitrogen as albumin ammonia.....	3.40
Nitrogen as nitrites.....	Trace.
Nitrogen as nitrates.....	Trace.
Total solids	3,495.00
Fixed residue	1,594.00
Loss on ignition.....	1,901.00
Suspended solids.....	1,350.00
Loss on ignition of suspended solids.....	600.00
Fixed residue of suspended matter.....	750.00
Insoluble residue	675.20
Iron and aluminium oxides.....	145.20
Calcium oxide	510.80
Magnesium oxide	39.28
Chlorine	40.00
Sulfate iron .....	.16
Reactions	Neutral.

"It is interesting to note the close correspondence between the insoluble residue and fixed residue of suspended matter.

"Yours sincerely,

E. H. S. BAILEY."

FOOD AND DRUG LAW.

Your committee on food and drugs standards has been in continuous session for the larger part of three days and nights in revising the food and drugs standards under the revised food and drug law. I heartily recommend that the report of the committee be adopted.

Regulation 9 of the sanitary regulations adopted under chapter 230 of the Session Laws of 1909 should be amended, for the reason that in its present form it is impossible for this department to successfully bring a prosecution for the violation of the sanitary provision of the law without the inspector first giving a written notice, ordering the abatement of

the conditions found to be unsanitary or a nuisance, notifying the chief food and drug inspector, who in turn is required to notify the violator of the law, and said violator then has five days to make the necessary changes, which requires our inspector to go to the expense and consume the time to return to the town in order that he may ascertain whether or not the violator of the law has complied with the order. One county attorney indicated that it would also be necessary for this department to prove that the order or letter of notification from this department was sent and the letter was actually mailed. In effect this order seems to require the presence of the inspector, chief food and drug inspector, the stenographer, the mail carrier, and every other official in this department and the post-office department to prove that the willful violator of the law had received these notices, all of which, of course, is impossible and entirely unnecessary. It is recommended, therefore, that all the words after the word "shall" in the second line on page 35 of the pamphlet containing the rules and regulations be stricken out and in lieu thereof the following words inserted: "file complaint with the county attorney of the county in which such violation occurs and notify the chief food and drug inspector of such action."

Quite a number of complaints for the violation of the food and drugs law have been filed with the various county attorneys since the last meeting of the Board, the most notable of these complaints being four relating to short weight in butter of the large creamery companies in the state, two of which have thus far been brought to a successful conclusion. The others are those of an excessive amount of dirt in potatoes. In one instance a car of potatoes contained 3180 pounds of dirt, sold by weight as and for potatoes. The first syrup case has been brought in Wilson county, the defendant pleading guilty.

A number of cases have been filed under the new weights and measures law. The bakers of the city of Leavenworth have determined to take to the supreme court contesting that provision under the weights and measures law relating to the weight of loaves of bread being required to be stated upon the label if the loaves are not full loaves, half loaves or quarter loaves.

In a number of instances attorneys for the defendants have vigorously assailed the constitutionality of the laws which give the State Board of Health the right and authority to make rules and regulations. In every instance thus far the courts have sustained the right of the Board to make and enforce rules and regulations.

BARBER LAW.

At the last meeting of the Board you authorized the president to appoint a committee from the Board to meet with a committee of the barbers to formulate plans for inaugurating a system of barber inspection. Before such committee was appointed it was thought wise to submit to the attorney-general the matter of the Board's right to create a barbers' examining board that would have the authority and power to examine barbers and issue license, making a charge therefor. Upon this proposition the attorney-general's office is in a dead lock, a portion of the legal lights of that department holding to the view that it can be done under the barber's law, and another portion holding that it can not be

done. They have asked for further time, and it is, therefore, recommended that the matter be deferred until the next quarterly meeting, pending a decision of the attorney-general.

PELLAGRA.

Those of you who have read McClure's Magazine for November were much interested in the article on Pellagra which appeared in that paper, which credited the state of Kansas with having ten cases of this disease. I immediately sent a telegram to Dr. C. F. Williams, secretary of the state board of health of South Carolina, who is quoted as authority for the statistics given, and in reply thereto I received the following telegram: "Case reported Perry, superintendent State Hospital Epileptics, Kansas; letter follows." Thereupon I made inquiry of all the state institutions in the state and was unable to discover a single case in the state. Dr. M. L. Perry, superintendent of the Hospital for Epileptics of Parsons, thought that he had a case last March. I requested that he give me this information in the form of a communication, which was received the following day and is herewith submitted:

"PARSONS, KAN., October 30, 1909.

"*Dr. S. J. Crumbine, Topeka, Kan.:*

"DEAR DR. CRUMBINE—I am writing you in regard to the case we were talking of over the phone this morning. This patient was a woman who had been in the institution since the time it was opened and died in March, 1909. You may think it a little strange that I am now so positive that she was a case of pellagra and yet did not give this as the assigned cause of death. My explanation for this is that there was still some doubt in our minds as to the correct diagnosis at the time the patient died, and as there had been a remission in the skin lesions I thought it probably a better plan not to be over conservative and give exhaustion as the cause of death. This was literally true inasmuch as the patient really died from exhaustion after being in bed for a number of months. Having given considerable attention to the subject for a short time before the patient's death and since that date, I have no hesitation in saying that she was a case of pellagra. I had the opportunity of observing quite a number of these cases while in institution work in Georgia, but at that time we did not recognize them as cases of pellagra, and in fact it was the belief then that pellagra was practically unknown in this country. I also had the opportunity of seeing fifteen or twenty cases of this disease at the time of a visit to the Georgia state hospital early last winter. I have not been able to place my hand on the article that I thought made mention of a case having been reported from Wichita, but will bear it in mind and report to you if I am able to find it.

"Yours truly,

M. L. PERRY, *Superintendent.*"

These matters are recorded for the purpose of making official record of the allegations set forth in McClure's Magazine and the results of our investigations, which it was entirely proper for this department to make under the circumstances, and which investigation seems to prove that the allegations set forth in the magazine article are untrue and unfounded.

Dr. R. S. Magee, pathologist for the Board, has given a number of his illustrated lectures on tuberculosis and general sanitation at various places throughout the state, all of which are helpful in the general educational propaganda which this department has undertaken in the matter of sanitation.

The State Board of Health is to be congratulated upon the appoint-

ment by the governor as a member of the Board so skillful and cultured a doctor as W. O. Thompson, of Dodge City, who has the distinction of having received the highest grade in his examination before the State Board of Medical Examination and Registration of this state that has ever been received by any physician.

The sixth annual conference of county and municipal health officers of the State Board of Health has been called and will convene to-morrow in Representative Hall. It is hoped that every member of the State Board of Health may take an active interest in the meeting and its discussions. The day following, the second annual conference of the Kansas Association for the Study and Prevention of Tuberculosis will convene in Representative Hall, and if possible the members of the State Board of Health are requested to be present. Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

MINUTES SECOND QUARTERLY MEETING.

DECEMBER 7, 1909.

The second quarterly meeting of the State Board of Health convened in the office of the secretary at 1.30 P. M., December 7, 1909, President Lerrigo presiding. Upon roll call all of the members of the Board and of the advisory board were present.

The minutes of the first quarterly meeting were read, approved and ordered placed on file.

The secretary then read his quarterly report, which was placed on file.

The Board then took up the discussion of the recommendations contained in the secretary's report, the first recommendation being that the Board should instruct the secretary as to what procedure should be undertaken in the better enforcement of the compulsory notification tuberculosis law. After a free and very general discussion the secretary was instructed to continue the campaign of education, both among laymen and physicians and county health officers of the state, from this office and through circular letters and publication in the BULLETIN, as well as through the lecturer of the tuberculosis exhibit; and the hope was expressed by the members of the Board that within a year the law would be fairly well enforced.

The recommendation of the secretary that the Board issue an order to prevent the pollution of the Caney river from industrial wastes discharged into Lake creek from the Sunflower oil refinery, located at Niotaze, was then taken up; and after the data secured by the secretary and engineer of the Board upon an investigation of the conditions around the refinery and

the practices of that establishment in the discharge of industrial wastes therefrom, in which the investigations together with the analysis of the water by the chemist of the Board, Professor Bailey, showed that the natural waters of the state were being polluted by the industrial wastes from the Sunflower oil refinery of Niotaze, and the water of the city of Caney, which is used as a domestic supply, was being contaminated by the said industrial wastes finding their way into the Caney river above the intake of the Caney river water supply. The following order was thereupon unanimously made and adopted:

WHEREAS, Investigations by the State Board of Health have shown that wastes from the Sunflower State Refining Company, at Niotaze, have been allowed to escape in an unpurified condition into the waters of the state; and

WHEREAS, It has been shown that such unpurified wastes have found their way into the Caney river at a point above the intake of the waterworks system of the city of Caney; and

WHEREAS, It has been shown that these wastes have polluted the public water supply of the said city in a manner prejudicial to the health of the inhabitants thereof:

Now, therefore, be it resolved, That the said Sunflower State Refining Company is hereby ordered and directed by the State Board of Health to cease to pollute the waters of the state with wastes from said refinery; and that this action be taken and consummated on or before the 1st day of April, 1910.

The question of the pollution of the Verdigris river at Coffeyville by the discharge of strawboard wastes into that river by a strawboard factory of that city was then discussed. The sentiment was expressed by the Board that sooner or later methods of purification of all kinds of industrial wastes would be required by this department in order that the purity of the natural waters of the state might be preserved, particularly in such streams as were used as a source of domestic water supply and in cases where the discharge of such waste was detrimental to the health of cattle drinking such waters or to the life of the fish in such streams.

The recommendation of the secretary concerning the change of regulation 9, formerly adopted under provisions of chapter 203 of the Session Laws of 1909, were then unanimously adopted and the regulation made to read as follows:

"The chief inspector or deputy inspector or agent or officer of the State Board of Health, or any local board of health, or police officer of any city, shall have full power at all times to enter

and inspect every building, room, basement or cellar occupied or used for the production or sale, manufacture for sale, storage, sale, distribution or transportation of foods and drugs, and all utensils, fixtures, furniture and machinery used as aforesaid; and if upon inspection any food or drug producing or distributing establishment, conveyance, employer, operative, employee, clerk, driver, or other person is found to be violating any of the provisions of chapter 203, Session Laws of 1909, or the rules or regulations promulgated thereunder, or if the producing, preparation, manufacture, packing, storing, sale, offering for sale, distribution or transportation of food is being conducted in a manner detrimental to the health of the employees and operatives and to the character or quality of the food or drugs therein being produced, manufactured, packed, stored, sold, distributed or conveyed, the officer or inspector making the examination or inspection shall furnish notice of said violation to the offender, and shall file complaint with the county attorney of the county in which such violation occurs and notify the chief food and drug inspector of such action."

The same order to be printed in the official state paper.

Inasmuch as the attorney-general had not yet given an opinion as to whether or not the State Board of Health could create a barber's board, require examinations of barbers, issue licenses, and collect fees for such examinations and the issuance of licenses, on motion the matter of the creation of a barber's board was continued until the next quarterly meeting.

Doctor Eddy then made the following report of an investigation of a typhoid epidemic at Palco:

"At your instance on yesterday I proceeded to Palco to investigate the typhoid fever situation with Doctor Barber of that place.

"The situation is as follows: Palco is a town of 250 people, located on the divide. The water supply is from drilled wells (private) sixty to eighty feet deep. Galvanized iron casing is used. The water is sheet water and is found beneath a layer of rock. The chance of pollution is slight.

"The milk supply is from the family cow, the town cows all going to the same pasture. A few stagnant pools of water are in the pasture. Some families supply an extra family or two with milk, but there is no dairy with a milk route.

"The ice used in town was taken from a creek several miles away, but the supply was exhausted six weeks ago. Since then they have used artificial ice from Salina. The use of ice in milk, tea and soft drinks has been quite general. A case of typhoid occurred last season in a family living on the bank of the stream from which the ice was cut, but as the case was not under Dr. Barber's care, he could not tell what chance of pollution of the stream there may have been.

"As to the stools in these cases in Palco, they were disinfected and poured into a hole four feet deep, then sprinkled with lime and covered with dirt. Not all cases were under observation at the start, and during

this period the privy was in use. These closets have a vault four to six feet deep and generally used until full and always accessible to flies.

"Few of the houses are well screened and the people do not fully realize as yet the importance of the fly as a carrier. During the past few weeks the new cases have diminished. At present there is but one new case, all others being convalescent.

"The subsidence of the epidemic at this time points to two possible sources of trouble: the fly, which is becoming scarce since frost, and the ice from ponds. I am unable to trace the source from which the first case acquired this disease.

"It has occurred to me as important that these old vaults should all be filled and fresh ones dug. They should also use a disinfectant, as some typhoid carriers may remain. This would practically eliminate one factor. The use of artificial ice hereafter might take care of the other, as the custom there is to use ice in milk, tea, and soft drinks.

"Doctor Barber, the only physician there, is both city health officer and a member of the city council. As he is anxious to control the typhoid situation there, both now and hereafter, he should have all the backing the Board is able to give to enable him to clean up the town."

The committee on food and drugs standards then made their report, presenting their proposed revision of food and drugs standards with the recommendation that they be adopted and published in the official state paper, whereupon Doctor Huffman moved and it was seconded that the revised standards, as presented by the committee, be adopted, and upon vote, all members of the Board being present, the report of the committee and the adoption of the standards were unanimous.

Published in the Topeka State Journal, December 21, 1909.

DEPARTMENT OF THE KANSAS STATE BOARD OF HEALTH, DIVISION OF
FOOD AND DRUGS, TOPEKA, KAN.

At the regular quarterly meeting of the Kansas State Board of Health, held in Topeka, Kan., December 7, 1909, the following resolution for the adoption of standards for foods and drugs was unanimously adopted upon roll call:

Resolved, That the following standards are hereby adopted by the State Board of Health for food standards for the state of Kansas, to be and remain in full force and effect, from and after their publication in the official state paper, and to be known as Regulation 35, which is amendatory to and takes the place of Regulation 37, which Regulation 37 is hereby repealed.

S. J. CRUMBINE, M. D., *Secretary*.

Approved December 16, 1909.

W. R. STUBBS, *Governor*.

NOTE.—The standards for foods and drugs have been published in pamphlet form and are available to anyone upon request.

S. J. CRUMBINE, M. D., *Secretary*.

Professor Bailey, chemist of the advisory board, then made the following report upon analysis of water for the State Board of Health. He also made a verbal report as to the

progress of the work in the food laboratories of the State Board of Health.

NOTE.—For water analysis, see bulletins in back part of this volume.

Professor Willard and Professor Sayre, analysts for the Board, then made verbal reports of the work being done in their departments for the Board, which showed a gratifying condition with forward progress of the work.

Professor Marvin made a brief report of the engineering work under the water and sewerage law, which showed a vast amount of municipal improvements going on all over the state.

Doctor Magee, pathologist for the State Board of Health, and Doctor Greenfield, bacteriologist for the State Board of Health, made brief reports of their various departments, Doctor Magee speaking entertainingly of a case of pellagra which he had the privilege of seeing in Texas on a recent visit to that state.

Professor Hoad and the secretary then made a statement to the Board concerning the appointment of a health committee of the faculty of the University of Kansas, which committee had been deputed by the secretary as health officers, with the authority as such, in order that the health of the students of that great institution be safeguarded from infectious or contagious diseases. It was indicated that a careful inspection was made of the boarding houses or boarding clubs to see that the surroundings were sanitary, that the water supply was wholesome, and that such reasonable measures as were necessary to safeguard the public health of the students of that institution be put in effective operation. The Board expressed the sentiment that such action of the University was to be highly commended, and recommended that other state institutions do likewise.

The assistant chief food and drug inspector then gave his verbal report of the progress of hotel inspection.

An informal discussion was then had on the report of the secretary as to progress in providing free antitoxin for the state's poor. It was suggested that no contract be entered into for any great length of time, as the funds in the emergency fund would not warrant such contract.

Upon motion adjournment was taken until Wednesday, at 9:30 A. M.

WEDNESDAY, December 8, 1909.

At 9:30 A. M. the State Board of Health convened in the office of the secretary, conjointly with the county and municipal health officers of the state, in the sixth annual conference of health officers, President Lerrigo presiding, whereupon the following program was rendered:

Registration of Tuberculosis: F. H. Slayton, M. D., city health officer, Wichita, Kan. Discussion led by C. T. Ralls, M. D., county health officer, Cowley county.

The Work of the Health Officer: E. C. Reynolds, M. D., health officer, Allen county. Discussion led by J. C. Montgomery, M. D., health officer, Riley county.

At twelve o'clock the meeting was adjourned for dinner, the State Board of Health meeting in the rooms of the Commercial Club, where a home luncheon was served by the caterer of the Commercial Club, which was partaken of by eighteen members of the Board and advisory board and food and drug inspectors.

No further business appearing before the Board, upon motion an adjournment was taken until the next quarterly meeting.

The following bills were audited and allowed:

Doctor Lerrigo	\$10 00
J. B. Carver	21 20
B. J. Alexander	17 93
H. L. Aldrich	31 30
C. D. Welch	27 54
W. C. Hoad	1 43
C. E. Coburn	12 70
W. O. Thompson	28 90
F. O. Marvin	2 08
H. L. Jackson	7 56
C. S. Huffman	21 15
V. C. Eddy	39 44
L. E. Sayre	4 06
J. A. Milligan	16 85

At 2 P. M. the state's county and municipal health officers convened in second session of the sixth annual conference in Representative Hall, when the following program was rendered:

The Pathology and Diagnosis of Acute Anterior Poliomyelitis: A. L. Skoog, M. D., University School of Medicine, Rosedale. Discussion led by Clay E. Coburn, M. D., vice president, State Board of Health.

Free Distribution of Diphtheritic Antitoxin: D. R. Stoner, M. D., health officer, Gove county. Discussion led by A. W. Cormack, M. D., health officer, Wilson county.

Tuberculosis in Animals Used for Food Products: Doctor De Wolf, federal inspector, Topeka, Kan. Discussion led by Dr. G. P. Marner, health officer, Marion county.

Hotel Inspections: W. J. V. Deacon, statistician, State Board of Health, assistant chief inspector. Discussion led by C. Granville Edgerton, M. D., health officer, Ness county.

Question Box on the Difficulties and Problems of the Job: Conducted by S. J. Crumbine, M. D., secretary, State Board of Health.

7:30 P. M.

The Investigation of a Typhoid Epidemic: V. C. Eddy, M. D., Colby, member, State Board of Health. Discussion led by W. O. Thompson, M. D., Dodge City, member, State Board of Health.

Water Pollution, Its Dangers and How to Prevent It: Prof. William C. Hoad, engineer, State Board of Health. Discussion led by J. J. Sippy, M. D., health officer, Sumner county.

After the conclusion of the program it was moved and seconded that the state, county and municipal health officers organize themselves into a permanent organization. The motion was adopted, whereupon the following officers were elected:

President, Dr. E. C. Reynolds, Iola, Kan.; vice president, Dr. C. T. Ralls, Winfield, Kan.; secretary, Dr. J. J. Sippy, Belle Plaine, Kan.; treasurer, Dr. C. Granville Edgerton, Ness City, Kan.

Committee on constitution and by-laws: Dr. F. A. Forney, Hutchinson, Kan.; Dr. G. P. Marner, Marion, Kan.; Dr. J. H. Winterbotham, Salina, Kan.

Upon motion it was decided to hold the next annual meeting of health officers in June, 1910, at the same time and place with the State Board of Health, when they meet in annual session. No further business appearing the motion to adjourn carried.

S. J. CRUMBINE, *Secretary.*

THIRD QUARTERLY REPORT.

March 16, 1910.

Mr. President and Members of the State Board of Health:

GENTLEMEN—In accordance with your instructions concerning the industrial wastes discharged into Lake creek from the Sunflower oil refinery, located at Niotaze, the company through its president and the receiver through Mr. Adams were duly notified by sending the order adopted by the Board through registered mail. There has been no further investigation by this department to determine whether or not the order of the Board is being complied with, although there has been no further complaint made as to the pollution of the creek or Caney river. It is, therefore, assumed that the order has been obeyed.

EPIDEMIC OF SMALLPOX.

In the latter part of December and early in January there were a number of complaints made to this department from Norton and Graham counties to the effect that an extensive epidemic of smallpox was prevalent, and that the proper precautions for quarantine were not being observed, whereupon Dr. V. C. Eddy of this Board was requested to make a visit to the infected area for the purpose of investigation and

putting into operation such means and measures as seemed advisable. Doctor Eddy visited Lenora, Norton and Hill City, and was instrumental, I believe, in putting in operation the provisions of the quarantine law, by which means the epidemic was speedily and effectively controlled.

He reported that one of the difficulties in the way of the proper enforcement of the health laws was the indifference, and even antagonistic attitude, of the county board of health toward the work and duties of the health officer. I regret to say that this is the almost universal attitude of the board of county commissioners, who have not yet realized that they are in fact the county board of health, and are in a great measure responsible for the sanitary conditions and the enforcement of the health laws in their respective counties. In those counties where we have been enabled to impress the county commissioners with the fact that they have certain duties and responsibilities in public health matters and that they are the county board of health and their health officer their executive officer, in these cases we have succeeded in a greater or less degree in arousing their interest and obtaining coöperation. In this connection it might be desirable to file as a portion of this report the circular letter issued to the various boards of county commissioners in this state, which is explanatory of the educational campaign we are endeavoring to inaugurate for the instruction of county boards of health. Incidentally it might be remarked that this letter has accomplished great good in many instances in eliminating contract or competitive bids, and in a number of instances increasing the salaries of the respective county health officers, all the way from 50 to 500 per cent. It might also be remarked that this is the heaviest blow that contract practice has received in this state for some time.

"December 28, 1909.

"To the Honorable Board of County Commissioners, the County Board of Health:

"GENTLEMEN—I desire to call your attention to a practice that seems to prevail in the majority of the counties of this state of calling for competitive bids in the case of the appointment of county health officer, and the awarding of such a position to the lowest bidder, which practice, in the opinion of the attorney for the State Board of Health, is illegal. I quote from the opinion of the attorney as follows:

"The statute governing the election of the county health officer is section 7216, General Statutes, Kansas, 1905, which provides as follows:

"The county commissioners of the several counties of this state shall act as local boards of health for their respective counties. Each local board thus created shall elect a physician, preference being given to adepts in sanitary science, who shall be *ex officio* a member of said local board and the health officer of the same. . . .

"This statute expressly provides that the person to be elected shall be a physician, and also, that in his selection the preference shall be given to an adept in sanitary science, and this is binding upon the board of county commissioners.

"The calling for competitive bids in such a case is equivalent to an agreement to select the person who will agree to act for the lowest price.

"In my opinion, it was not the intention of the legislature that the county health officer should be selected in this manner. It is manifest that where the selection is made by the local board on competitive bids that instead of preference being given to an adept in sanitary science, that the preference in that case would be given to the applicant who

rated his services the cheapest. In my opinion, such action on the part of the board of county commissioners is not only in violation of the spirit, but also of the letter, of said statute, and is contrary to law.

"I trust, therefore, that in the selection of the health officer, if the above practice prevails in your county, that it will be discontinued, and the appointment made with special reference, as contemplated in the law, to the fitness of the physician for the position.

"In this connection, I desire to again call your attention to the many new and important duties of the health officer. In addition to his work as the executive officer for your county board of health, and as general supervisor over the sanitary affairs of your county, he is the local registrar of vital statistics, the supervisor and enforcer of the quarantine law, the inspector of slaughterhouses and meat markets, barber shops and hotels, public and private schools, jails, poorhouses, and other public buildings, and to him is specially delegated the enforcement of the laws for tuberculosis control, which law is among the most important that has ever been placed upon the statute books. It must be self-evident, therefore, that your selection of county health officer should be a man particularly well qualified, not only as a physician, but as an executive officer, and that you should as the county board of health provide him with such ways and means, as well as such an adequate salary, as will enable him to put into successful effect these most important laws and duties, and that will adequately compensate what is now the most important office in the county, that of the county health officer.

"Cordially yours, S. J. CRUMBINE, M. D., *Secretary.*"

FOOD AND DRUGS.

Immediately upon the publication of the new food standards adopted at the last session the following circular letter was issued to the packers and butchers of the state:

"To the Meat Packers and Butchers of Kansas: December 24, 1909.

"I am inclosing you herewith a copy of the official publication of the newly devised and adopted food standards for the state of Kansas, as published in the official state paper, required by law. I desire to direct your attention to the new standards on sausages, particularly to the new standard and classification on cereal sausage, which reads as follows:

"'3. Cereal sausage is a sausage to which has been added not more than four per cent of cereal, and which contains no greater percentage of water than does normal meat of the kind used in preparing the sausage.'

"I desire to also direct your attention to the standard preservatives as adopted by this department, which reads as follows:

"'1. Standard preservatives are salt, sugar, vinegar, spices and their essential oils, wood smoke, edible oils and fats, and ethyl alcohol.'

"I am also inclosing a copy of chapter 264 of the Session Laws of 1909, known as the weights and measures law, together with the rules and regulations adopted thereunder. A special investigation should be made of weights and measures used and see that they comply with the standards laid down in the provisions of the law. I desire to direct your attention to sections 9, 10 and 15 of the law, which seems to require that all articles not specifically enumerated in the law shall be sold by standard weight or measure or numerical count, except where parties otherwise agree. Applying this proposition to a specific instance, I am of the opinion that where lard is sold by the pound at so much per pound the weights in such lards are required to be the net weights, unless the parties to the transaction are mutually agreed that it shall be otherwise.

"The department expresses the hope that these matters may receive your early consideration and attention.

"Cordially yours, S. J. CRUMBINE, M. D., *Secretary.*"

Also, on January 4 a circular letter was issued to the manufacturers and jobbers of Kansas, which reads as follows:

"The Manufacturers and Jobbers of Kansas: "January 4, 1910.

"I am inclosing you herewith a copy of the revised food standards as recently adopted by the Kansas State Board of Health, approved by the governor, and published in the official state paper.

"I desire to call your attention to the new standard for flavoring products: You will notice that the names extract, flavoring extract, flavoring and flavor are synonymous terms, and are all required to conform to the standards for strength and purity as promulgated hereunder; you will notice, also, that the use of artificial or added coloring to this class of food accessories is prohibited.

"Manufacturers should immediately conform to these standards, in the manufacture of all new products, but will be allowed until July 1, 1910, to dispose of stock on hand that does not comply with the new standards but which were legal under the former standards. The retail trade will be allowed what is believed to be ample time to dispose of stocks, namely, January 1, 1911.

"These standards are in accord with recent decisions of the federal court at St. Louis, and this department is continuing the policy of following the federal government in such cases, when not in conflict with our state law.

"Please note, also, the standard on imitation flavoring and on baking powder.

"Ground cinnamon, ground cassia, is required to contain 0.5 per cent of volatile ether extract, which means that cinnamon bark that contains practically no oil of cinnamon, but which has hitherto been ground up and mixed with a product of standard strength, can not be used for such purpose.

"Your attention is particularly called to the standards on molasses. A product sold under the name 'molasses' must be a *first* molasses; second molasses and third molasses or black strap, must be labeled and sold as such.

"A large number of new products have been standardized, and the department expressed the hope that your coöperation in the enforcement of the law and standards may be as generous and prompt as it has been in the past.

"I am also inclosing you a copy of chapter 264 of the Session Laws of 1909, known as the weights and measures law, together with the rules and regulations adopted thereunder. A special investigation should be made of weights and measures used and see that they comply with the standards laid down in the provisions of the law. I desire to direct your attention to sections 9, 10 and 15 of the law, which seem to require that all sections not specifically enumerated in the law shall be sold by standard weight or measure or numerical count, except where parties otherwise agree. Applying this proposition to a specific instance, I am of the opinion that where lard is sold by the pound, at so much per pound, the weights in such lards are required to be the net weights, unless the parties to the transaction are mutually agreed that it shall be otherwise.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

It is believed that by placing the information before the manufacturers and dealers in this personal way, a copy having been sent to each dealer and manufacturer, that a quick and more cheerful compliance is brought about than if we would depend entirely upon the necessarily delayed inspection.

The department is now pushing a vigorous campaign in food and drug inspection and have brought eighty-six prosecutions since the last meeting of the Board. It is believed that after three years' education and instruction dealers should be required to strictly observe the requirements

of the law, particularly the sanitary requirements; and it may be noted that among groceries, bakeries and meat markets the larger proportion of these prosecutions are for violation of the sanitary provisions of the law.

The total number of inspections upon which returns were made by inspectors to this department are as follows:

For December, 538; for January, 972; for February, 761; total for the three months, 2271; average number of inspections per month, 757; the average salary cost per inspection, 30.4 cents each.

On February 25 the following circular letter was issued to the Kansas Bottlers' Association:

"Kansas State Bottlers' Association:

February 25, 1910.

"GENTLEMEN—In order that the sanitary provisions of the food and drugs law be literally observed and in order that the soft drinks put up by the members of the Kansas State Bottlers' Association may be pure and wholesome, this department will require that all bottles, immediately after they have been emptied by the retail dealer, shall be placed in its case, with the neck down, to the end that the bottle may be thoroughly drained, so as to prevent fermentation of the remaining contents of the bottle and to prevent the entrance of dust and flies. Inspectors will be instructed to see that these regulations shall be observed under the penalty of the law.

"Bottlers are cautioned to use only pure and wholesome water in making their product and to see that every bottle is thoroughly washed and rinsed in pure running water before it is filled again. Bottlers will find that if these suggestions are put into practice that it will be one of the most valuable assets of their business in guaranteeing a pure and wholesome product. There is no reason why the product of the Kansas Bottlers' Association should not take rank together with that of other Kansas products, which are of the first and highest quality.

"Very truly yours, S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

All dealers in the state have been supplied with a copy of the letter and printed instructions are now enclosed in each case of pop for the information of retail dealers concerning the question of bottles.

VITAL STATISTICS.

After having tried for the past four years to arouse sufficient sentiment among the physicians of the state, which would insure the passage of a registration of vital statistics law, it occurred to me that if the commercial interests of the state could be brought to see the value of such a law to the commercial interests of the state, there would be no difficulty in having such a law passed. This idea was the result of correspondence with the Kansas City Commercial Club, in which they demanded to know why it was that we were unable to give them accurate data as to the birth and death rate of Kansas City and Wyandotte county in order that they might show to the world that we had a healthful and salubrious climate, we believe and know we have. Accordingly the following circular letter was addressed to the commercial clubs and boards of trade of Kansas:

"January 3, 1910.

"To the Commercial Clubs and Boards of Trade of Kansas:

"GENTLEMEN—The purpose for which your organization is planned is to keep things moving, stimulate the growth of population and trade, first for your own town and community, and indirectly the state.

"You advertise your crops, your climate, your schools, your churches, your progressive spirit, and your financial opportunities. You talk of Kansas as a healthy state, and it is; but can you prove it? No. Because this great state of ours, which leads the world in progress and opportunity, is at the tail end of the procession in the most important matter of proper registration of vital statistics.

"Just think how you would swell up with pride, if you could say, with the assurance of accurate figures behind your statement, that Kansas has a lower death rate than Iowa, Missouri, Nebraska, Oklahoma, or Colorado; and we are firmly convinced that such is indeed a fact, but, unfortunately, we can not prove it.

"A very large percentage of emigrants from the eastern states come to the West looking for a climate noted for its salubrity, as well as for business opportunity; and those of you who know the climate of Kansas will agree with us that there is none better.

"Elbert Hubbard says of Kansas: 'A land so rich in wealth, that one should reach it direct from Massachusetts in order to know by contrast its marvelous possibilities; a land where no one dies except through accident or overeating.'

"KANSAS NEEDS A REGISTRATION LAW, AND YOU NEED IT.

"We are asking each commercial club and board of trade to take this matter up and urge that such a law be placed upon the statute books. Will you aid?

"Authoritative information as to the necessity and desirability of such laws, from an economic, legal and sanitary standpoint, will be furnished upon request by addressing Dr. Cressy L. Wilbur, chief statistician, division of vital statistics, bureau of the census, department of commerce and labor, Washington, D. C.

"Please consider this department and its records at your disposal at all times, to aid you in your work.

"Yours for greater Kansas,
S. J. CRUMBINE, M. D., *Secretary.*
W. J. V. DEACON, *Statistician.*"

This campaign of education among the commercial clubs of the state will be continued until the next meeting of the legislature, when we believe it will then be possible to have a registration law.

WEIGHTS AND MEASURES.

Since two of our food inspectors and two of our drug inspectors have been supplied with traveling kits for inspecting weights and measures, the inspection under this law has proceeded with great satisfaction to the department. It has been a great revelation to both this department and to dealers to find so many false weights and worn out and inaccurate scales. Take for illustration, the inspection made in the city of Wichita, in which it was found that two-thirds of the prescription weights being used in that city were inaccurate and had to be condemned. Usually weights are found to be short and it is rather rare that weights are overweight. So far as financial loss is concerned this is not a serious charge against the druggists, but in the case of dealers in food products, the financial loss to consumers from these short weights, so universal over the state, must be and is enormous in amount. In the case of the prescription weights in the drugs it has merely a therapeutic significance, which after all is more serious than that of a mere money consideration. For illustration, one dram weight was thirteen grains short. This is an enormous per cent and might indicate how it is that in many instances

the official preparations put up by druggists have been found to be substandard in strength and quality.

I am glad to say that this weight inspection has been welcomed by the retail dealers, particularly by the druggists, as they seem quite as anxious to know whether or not their weights and measures are accurate as is this department, and as you know, they have had no way hitherto of ascertaining that fact. Our drug inspectors inform me that about one in five of the graduates in drug stores have to be condemned because such graduates do not come within the table of tolerance required.

On February 2d the following circular letter was issued to the inspectors of the department:

"Circular Letter No. 35.

"To the Food and Drug Inspectors:

"February 2, 1910.

"I desire to call your attention to the matter of placing the condemnation tag upon scales. The tag should not be put upon the working parts of the scales. Under the law these tags can not be removed by any person except an inspector or the state or county sealer. If, therefore, the tags are placed upon the working parts of the scales it is difficult, and even impossible, for them to be properly repaired.

"At a meeting of the Southwestern Wholesale Ice Cream Manufacturers' Association, held at Parsons, January 12th, the following resolution was adopted:

"*'Be it resolved,* That the said state officers establish strict sanitary conditions in factories both large and small:

"*'Be it further resolved,* That the aid of the proper authorities be requested to assist us in a vigorous effort to have our ice cream containers kept in a sanitary condition when in the custody of our customers.'

"You should lend your efforts to bring about a consummation of the above resolutions to the best of your ability. Where ice cream containers are in the hands of dealers that are being used for improper purposes, information of that fact should be immediately submitted to this department.

"The same rigid inspection and sanitary requirements should obtain in all bottling works where soft drinks are manufactured. Bottles must be thoroughly cleansed and rinsed in clean running water before they are again used, and it is especially important that the water supply used for making soft drinks be of the highest sanitary quality and absolutely above the suspicion of contamination. Retail dealers should be cautioned about storing the empty bottles in the cases by turning them upside down to the end that they may be thoroughly drained and to exclude flies and other insects. You can not err in making the most rigid sanitary requirements along these lines.

"Where you are more than one day in a town it is urged that effort be made to secure rates at the hotels in order that your expense account may be kept down to the minimum.

"Keep in mind the list you have in your possession in order that all towns that have not been inspected may be covered in the very near future.

Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

ANTITOXIN.

Arrangements have been completed with the H. M. Alexander Company, of Marietta, Penn., for the purchase and distribution of diphtheria antitoxin for the indigent of the state. Inasmuch as time is such an important element in the treatment of diphtheria, it was thought that only such method would be successful as would put within the reach of every

physician in the state, within a very few hours, a supply of antitoxin for immediate use.

Accordingly, county health officers were asked to suggest the name of some responsible druggist in every town having a population of 500 or over in their respective counties. Whereupon correspondence was had with the druggist as to his willingness to act as a depository for the distribution of free antitoxin. Through this correspondence the following stations have been established:

C. E. Northcraft & Co., Abilene.	G. A. Frank, Dexter.
W. L. Howe, Almena.	The Round Drug Co., Dighton.
Read's Drug Store, Altamont.	Palace Drug Co., Dodge City.
H. B. Leach & Son, Alton.	P. E. Holmes, Douglas.
Irwin & Potter, Anthony.	Dr. C. L. Ebnother, Downs.
W. H. Lightstone, Arkansas City.	R. W. Powers, Durham.
Dodge & Fuller, Ashland.	C. E. Curry, Easton.
W. V. Ingham, Atchison.	H. Evans Lombe, Edna.
J. F. Ritner, Atchison.	Ebert & Co., Effingham.
Thos. Sturm, Atlanta.	C. H. Selig, El Dorado.
L. J. Graves, Atwood.	William Wright, Elk City.
J. A. Grant, Augusta.	D. C. Arnold, Ellinwood.
I. F. Schnebly, Baldwin.	Ford & Cave, Ellis.
A. R. Kane, Baxter Springs.	W. E. Sherrieff, Ellsworth.
W. M. Reynolds, Beattie.	L. H. Breese, Elmdale.
Ideal Pharmacy, Belle Plaine.	W. R. Irwin, Emporia.
The Republic Pharmacy, Belleville.	Dr. O. G. Keller, Englevale.
O'Brien Pharmacy, Beloit.	Fleming & Son, Enterprise.
R. R. Clutz, Bendena.	H. E. Stevens, Erie.
Dr. Crosthwaite, Bennington.	J. D. Clarke, Eureka.
A. H. King, Blue Mound.	E. R. Brown, Eskridge.
C. Coulter, Blue Rapids.	Pierce Bros. & Coleman, Fredonia.
S. M. Scheffer, Bonner Springs.	Dr. D. O. Munson, Franklin.
J. S. Cunningham, Bronson.	Pritchard, Blatchley Co., Ft. Scott.
W. E. Fowler, Brookville.	D. H. Kurtz Drug Co., Ft. Scott.
The Lowrey Pharmacy, Buffalo.	J. S. Patton, Frontenac.
J. M. Henderson, Burden.	Edward Dorsey, Fulton.
E. T. Price, Burlingame.	O'Brien & Farrant, Florence.
W. J. Briggs, Burlington.	Taylor & Taylor, Frankfort.
F. A. Bichet, Burns.	L. J. Haines, Galena.
Dr. Ira T. Gabbert, Caldwell.	A. & A. Drug Co., Garden City.
Opera House Drug Store, Caney.	W. J. Lane, Garnett.
J. W. Rosser & Co., Carbondale.	Gas City Drug Store, Gas.
D. C. Everman, Cawker City.	A. M. Llewelling, Gaylord.
P. M. Whitney, Cedarvale.	J. E. McNaught, Girard.
J. L. Sewell, Chanute.	Montee Bros., Girard.
J. E. Dillard, Cherokee.	W. E. Keef, Glen Elder.
S. W. Squier, Cherryvale.	Aerensburg & Cullen, Goodland.
G. P. Bush, Chetopa.	The Hooper Drug Co., Great Bend.
Campbell Mercantile Co., Claflin.	D. S. Sparkes, Greensburg.
Fallington & Hold, Clay Center.	J. W. Montgomery, Greenleaf.
E. Bechard, Clyde.	B. B. Mason, Grenola.
J. T. Lang & Son, Coffeyville.	Dingman Bros., Hanover.
J. B. Hampton, Colby.	Slack & Griggs, Harper.
Dave Phillips, Coldwater.	G. W. Britton, Hartford.
The Row Drug Co., Colony.	City Drug Store, Havensville.
C. E. Bartlett, Columbus.	A. W. McKinley, Haviland.
Layton & Neilson, Concordia.	H. H. King, Hays.
W. B. Hilton, Cottonwood Falls.	Harpster Pharmacy, Hepler.
F. A. Robbins, Council Grove.	T. Stevens, Hiawatha.
Culver Drug Co., Culver.	R. M. Rieyle, Hillsboro.
O. L. Kensey, Delphos.	Hoisington Drug Co., Hoisington.

- Scott & Taber, Holton.
 A. J. Pokorney, Holyrood.
 Dr. J. N. Ketchersid, Hope.
 Chris Sauter, Horton.
 S. R. Swan, Howard.
 D. L. Wiggins, Hoxie.
 J. B. Porter Drug Co., Hugoton.
 F. A. Cookey, Humboldt.
 The A. & A. Drug Co., Hutchinson.
 O. E. Fair, Independence.
 B. Moore, Inman.
 Reynolds Drug Co., Iola.
 H. O. Hardesty, Jennings.
 C. W. Patchen, Jetmore.
 Volz & Burch, Junction City.
 H. E. Dengel, Kansas City.
 Geo. Forscheler, Kansas City.
 Hassig Brothers, Kansas City.
 O. W. Klee, Kansas City.
 Harry Lieby, Kansas City.
 Wm. McGeorge, Kansas City.
 Osage Pharmacy, Kansas City.
 G. W. Scott, Kansas City.
 L. A. Golden, Kensington.
 J. W. Cookson Drug Co., Kingman.
 A. & A. Drug Co., Kinsley.
 L. T. Brown, Kirwin.
 The Kiowa Drug Co., Kiowa.
 Pokorney Pharmacy, La Crosse.
 W. H. Broadwell, La Cygne.
 Waters & Danforth, La Harpe.
 G. C. W. Richards, Lakin.
 E. G. Wickwire, Larned.
 Dick Brothers, Lawrence.
 Woodward & Co., Lawrence.
 Muhl & Schott, Leavenworth.
 Adolph Lange, Leavenworth.
 W. S. Arbuthnot, Lebanon.
 Van Pelt & Brumbige, Lenora.
 J. B. Carlele, Leon.
 O. E. Smith, Leoti.
 A. J. Athay, Le Roy.
 Lewis Drug Co., Lewis.
 Geo. Smith & Brother, Liberal.
 J. G. Cuddy & Co., Lincoln.
 John Gustafson, Lindsborg.
 John Kaff, Longton.
 H. S. Whitman, Lyndon.
 John Mignot, Lyon.
 The Lyons Drug Co., Lyons.
 G. P. Roberts, McCune.
 Alex Roesse, McCune.
 G. L. Ratliff, McLouth.
 C. W. Engborg, McPherson.
 J. E. Demain, Macksville.
 W. J. Bangs, Madison.
 C. E. Lvnn, Mankato.
 H. S. Willard & Co., Manhattan.
 Red Cross Pharmacy, Marion.
 O. S. Elvin, Marquette.
 Cook Drug Co., Marysville.
 C. B. Leslie, Meade.
 Dr. L. E. Corwin, Melvern.
 J. S. Fleming, Miltonvale.
 E. L. Chapin & Son, Minneapolis.
 E. W. Elting, Moline.
 W. E. North, Moran.
 U. S. Davis, Morrill.
 J. E. Sandidge, Mulberry.
 C. E. Palmer, Mulvane.
 Pierce Bros. & Eson, Neodesha.
 R. H. Hammond, Ness City.
 R. E. Buckmaster, New Ulysses.
 Norcatur Pharmacy, Norcatur.
 Lathrop Bros., Norton.
 The Webb Drug Co., Nortonville.
 G. H. Ensign, Oakland.
 W. T. Stevenson, Oberlin.
 Sam Kelly, Olathe.
 The Onaga Pharmacy, Onaga.
 A. C. Brown, Osage City.
 J. B. Hatfield, Osborne.
 H. H. Reed, Osawatomie.
 M. S. McCreight, Oskaloosa.
 Kingsburg & Frick, Oswego.
 C. L. Becher, Ottawa.
 Dr. Ira Puderbaugh, Ozawkie.
 H. T. Clifton, Paola.
 Feess Brothers, Parsons.
 Francis & Hayner, Pawnee Rock.
 D. J. Roberts, Peabody.
 Chas. S. Coates, Perry.
 H. R. Fish, Peru.
 McCormick & Co., Phillipsburg.
 Pittsburg Drug Co., Pittsburg.
 E. W. Bartleson, Pleasanton.
 W. D. Wilsey, Pratt.
 Bodley & Cander, Quenemo.
 Howard R. Turtle, Quinter.
 S. T. Parker, Robinson.
 G. T. Dawson, Russell.
 G. E. Dunn, St. Francis.
 Tamer & Uhl Drug Co., St. John.
 C. L. Sherwood, Sabetha.
 Palmer Opera House Phar., Salina.
 F. E. Nicholson, Scott City.
 A. B. Bunten, Scranton.
 E. I. Fish, Sedan.
 Selden Pharmacy, Selden.
 J. L. Clark, Seneca.
 H. S. Blakely, Severance.
 R. E. Marsh, Severy.
 J. P. Wormeringer, Sharon Sp'gs.
 Warble-Diamond & Co., Smith C'tr.
 Caldwell & West, Spearville.
 A. & A. Drug Co., Stafford.
 A. & A. Drug Co., Sterling.
 J. E. Henry, Summerfield.
 W. C. Dougherty, Syracuse.
 C. D. Vermillion, Tescott.
 B. E. Eldridge, Thayer.
 C. H. Cain, Tonganoxie.
 Campbell Drug Co., Topeka.
 Fred Snow, Topeka.

Geo. W. Stansfield, Topeka.	Searles & Purdem, Wetmore.
Matt Weightman, Topeka.	R. J. Herbold, White City.
D. Sinclair, Troy.	C. W. Shreve, White Cloud.
E. M. Barnhart, Udall.	J. W. Steiger, White Water.
A. B. Carter, Valley Falls.	Cookson Drug Co., Wichita.
O'Reiley, P. A., Walnut.	Dockum Drug Co., Wichita.
M. L. Stone, Wamego.	W. S. Hennion, Wichita.
Waterman Bros., Washington.	G. T. Riley, Wichita.
Rummell Drug Co., Waterville.	A. W. Cushman, Wilsey.
Jacob Miller, Wathena.	James Latta, Wilson.
H. A. Keuneke, Wellington.	J. R. Casely, Winchester.
W. J. Allen, Weir City.	M. W. Friedenborg, Winfield.
Burke Bros. Drug Co., W. Mineral.	F. W. Butler, Yates Center.
Star Drug Store, Westmoreland.	

This makes a total of 255. It is hoped that by establishing this large number of stations the greatest good may be accomplished and scores of lives of the children of this state be saved to grow up as useful citizens.

The agreement entered into with the Alexander Company is extremely satisfactory to this department inasmuch as we are not required to have any money invested, only paying for the amount distributed at the end of each month, the company carrying the stocks on their own account with the various distributing stations.

The amount of antitoxin at retail values in the depositories of the State Board of Health and in the office of this department totals the tidy sum of \$7281.

WATER AND SEWERAGE LAW.

Your engineer and secretary have visited quite a number of cities since the last meeting of the board, inspecting waterworks or sewerage systems, or making an investigation and sanitary survey of proposed plants. Meetings in the interest of water or sewerage have been addressed by the secretary at Peabody, Sabetha, and Erie, and by the engineer at Herington.

Permits for the building and operation of sewerage systems have been granted to Atchison, Peabody, Erie, and Leavenworth, the sewage from the system at Peabody and Erie being required to be purified by the septic tank system.

Permits for the construction and operation of waterworks were approved for the following towns: Marion, Meade, Hays, St. John, and Erie.

CONTAGIOUS DISEASES.

A review of the bulletin on contagious diseases for the past three months would seem to indicate that the number of contagious diseases and the number of deaths have largely increased over that of any other period in the state's history. A more careful scrutiny or comparison with former reports will reveal the fact that this increase is only apparent and not real, for the reason that we are now receiving better reports from county and city health officers than we ever have in the history of the Board, that the reports are more accurate and but very few counties missing in each report, and these usually of the extreme western counties, the figures of which would not materially affect the total result. The increase in contagious diseases means simply, therefore, a better sanitary organization and fairly full, complete, and accurate reports on contagious diseases.

In looking over the tabulation and comparison of cases and deaths from smallpox and measles during the past four years I find the following results:

	<i>Smallpox,</i>		<i>Measles,</i>	
	<i>Cases.</i>	<i>Deaths.</i>	<i>Cases.</i>	<i>Deaths.</i>
1906	1,560	3	1,021	21
1907	1,795	6	6,464	70
1908	3,624	6	2,442	18
1909	2,197	4	3,784	43
Total	9,176	19	13,711	152

This gives a death rate from smallpox from the cases reported of 0.2 per cent and a death rate from measles from the cases reported of 1.11 per cent, or almost six times the percentage of deaths from measles than from smallpox and 133 more deaths from measles in the state during these four years than from smallpox, in which latter disease we have been spending so much money and time in attempting to control by the most rigid quarantine measures. These figures seem to prove that measles is a more dangerous disease to the public health than smallpox has been during the past four years. Indeed I am of the opinion that such is actually the case. Not only because of the almost six times greater death rate, but because also of the many physical defects that are often left after a serious case of measles. Specialists and sanitarians are quite generally agreed that measles is one of the most fruitful sources of preparing a suitable soil and a lowered bodily resistance for tuberculosis, and I am sure there are but few physicians of wide experience but what have had illustrations of this fact in their own practice.

Recently I had sent to me by a fond mother in a certain city in southwest Kansas, clippings from a local paper which told of two deaths in one family and one in another family due to measles, and that several other children in that community were not expected to live at the time the paper went to press. Inquiry also from a certain county attorney in this state indicated that he thought that a disease so dangerous should be required to be quarantined the same as other dangerous diseases mentioned in the quarantine law, but which under a former resolution of this Board is not required.

It is recommended, therefore, that measles be declared by this Board a disease dangerous to public health and be required to undergo the same quarantine provisions as are laid down in the quarantine law, and that regulation 29 of the Board's general health regulations be amended to read in conformity therewith.

BARBER SHOP LAW.

After considerable delay the attorney-general, upon March 10th, submitted an opinion of the Board's authority under the barber law, which is herewith submitted for your information, which information, of course, must be the guide to the Board in the enforcement of the law:

"March 10, 1910.

"*Dr. S. J. Crumbine, Secretary, Board of Health, State House:*

"DEAR SIR—Answering your oral inquiry asking my construction of chapter 224 of the Session Laws of 1909 as to whether or not said chapter authorizes the Board of Health to appoint a barber examining board with power to make examinations of barbers as to their proficiency, cleanliness,

etc., and issue a certificate or license and charge a fee therefor; and in the event that said chapter does not authorize such procedure, will it authorize you to select some person to make an examination of barber shops and charge an inspection fee therefor, the Board to hold a regular meeting and pass the proper rules and regulations to authorize such procedure, I have to say:

"In my opinion the statute only authorizes the Board to make such rules and regulations as will require barber shops, barber schools, public bathhouses and public bathrooms to keep clean and to be thoroughly disinfected to the end that the spread of contagious or infectious diseases may be prevented. These rules I understand the Board has adopted. If the persons in charge of such places do not obey your rules you can prosecute them under this statute of and for a misdemeanor. But in the absence of express authority by statute you have no authority to collect a fee for such inspection, nor have you any authority to examine barbers or others to ascertain whether or not they are sufficiently versed in their professions.

"In *Laporte v. Board of Health of the City of Hoboken*, 58 Atl. 115, the supreme court of New Jersey held that the board of health had ample authority in the exercise of its police power to prevent the spread of contagious skin diseases in barber shops, and that stringent regulations for that purpose are lawful. It seems that the board of health had provided rules and regulations to be observed in barber shops to prevent the spread of contagious skin diseases and fixing a fee of \$2 in each case. The court held that the legislature had given ample authority to the board of health in the exercise of its police power to prevent the spread of contagious skin diseases; and further held that the power and authority for the preservation of the public health should be liberally construed so that the law might be effective. See *Morford v. The Board of Health*, 61 N. Y. Law, 389, 39 Atl. 706, and *Gregory v. City of New York*, 40 N. Y. 273.

"It is a matter of current history in Kansas, however, that the legislature enacted a stringent law providing for a barber license board and examination for permission to practice, together with a license fee therefor, which law was repealed after a short trial. This evinces an evident determination on the part of the legislature not to require an examination to authorize one to work at the barber trade, and I am of the opinion that the chapter above quoted, viewing it in the light of the most liberal construction that can be given it, merely authorizes the Board of Health to make stringent rules and regulations concerning cleanliness, etc., which I understand you have done.

Very truly yours,

F. S. JACKSON, *Attorney-general.*"

TUBERCULOSIS EXHIBIT.

The interest in the tuberculosis exhibit is increasing, as is plainly indicated by the continued increase in attendance. Up to the present time there have been approximately 75,000 people that have seen the exhibit and heard the lectures since we started on the road the first week in August, 1909. This campaign of education has not only grown exceedingly popular wherever the exhibit has been shown, but has made increasing demand upon this office in the matter of public addresses.

The pathologist, Doctor Magee, has been kind enough to relieve the secretary in many of these calls and has given three or four illustrated lectures at various places in the state. As an indication of this growing demand, will say that the secretary gave eighteen addresses during the month of January, nine in February, and four thus far in March. All this encroaches very seriously upon the time of the office, yet it must be a part of the educational campaign inaugurated by the department and,

therefore, properly a part of the work. The time is coming and indeed is here when various members of the board must be called upon to take such active part in this increasing demand for public speaking as will enable us to meet all the calls for that purpose. Recently Mr. Deacon has been pressed into service and has prepared and made several very capable addresses. Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

MINUTES THIRD QUARTERLY MEETING.

MARCH 16, 1910.

The third quarterly meeting of the Kansas State Board of Health was held in the office of the secretary, in the state house, on March 16, 1910, the session convening at two P. M., President Lerrigo presiding.

Upon roll call all of the members of the Board were present excepting Dr. W. O. Thompson and Dr. J. A. Milligan. Members of the advisory board present were Prof. Wm. C. Hoad, the engineer, Prof. J. T. Willard, food analyst, Dr. S. E. Greenfield, bacteriologist, and Dr. R. S. Magee, pathologist.

The minutes of the second quarterly meeting were read, approved, and ordered placed on file.

The secretary then read the third quarterly report, which, upon motion, was ordered placed on file.

The recommendation of the secretary concerning the desirability of including measles in the list of diseases dangerous to public health, enumerated in the quarantine law, was then very freely discussed, and by unanimous consent the president ordered the matter be laid over until the annual meeting in June, to be taken up under unfinished business.

The engineer for the Board made a verbal report of the work of the department under the water and sewerage law, which indicated the great amount of municipal improvements going on all over the state.

Prof. Willard made a brief verbal report of the work on food analyses and experimentation.

Under the head of new business, the secretary made a report to the Board concerning the delinquency of several county health officers, in their refusal and neglect to make the reports required to be made to this department, and to make the inspection of hotels required under the hotel inspection law.

Upon motion, the secretary was instructed to notify Dr. Dorothy Allen, county health officer of Jewell county, and Dr.

M. De Tar, county health officer of Edwards county, of their delinquency in the work of county health officer in their respective counties, and to cite them to a hearing to be held at the annual meeting of the State Board of Health in June, 1910, to give their reasons, if any, why the State Board of Health should not remove them from office, as provided in chapter 102 of the Session Laws of 1909. After further discussion on this subject, Mr. C. D. Welch, attorney for the Board, was instructed to take such action in the matter of the aforesaid delinquencies as the facts in the respective cases and the law seemed to warrant.

No further business appearing, upon motion, the Board adjourned.

The following bills were audited and allowed:

C. E. Coburn.....	\$7 70
J. T. Willard.....	2 88
V. C. Eddy.....	21 50
J. B. Carver.....	20 04
W. C. Hoad.....	1 98
C. D. Welch.....	22 90
B. J. Alexander.....	10 40
C. H. Lerrigo.....	5 00
H. L. Aldrich.....	26 86
C. S. Huffman.....	16 70

ANNUAL REPORT OF THE SECRETARY TO THE STATE BOARD OF HEALTH.

June 14, 1910.

MR. PRESIDENT AND GENTLEMEN—Among the items of unfinished business of the last quarterly meeting was that of the recommendation of the secretary to include measles in the list of diseases dangerous to the public health. The secretary desires to renew the recommendation, and in support of such recommendation our statistician, Mr. Deacon, will present a tabulated statement as to the attitude of other state boards of health concerning the matter, and also a comparative table of mortality from measles with that of other diseases now classified as dangerous to the public health. I desire to also recommend to the Board that in addition to classifying measles as among the diseases dangerous to the public health, and required to be reported to the local health officers, and by them to this department, that there be included in the diseases subject to report that of epidemic anterior poliomyelitis, typhoid fever and ophthalmia neonatorum.

Also, under the same head of unfinished business, I desire to report that notices were served on Dr. M. De Tar, county health officer of Edwards county, and Dr. Dorothy Allen, county health officer of Jewell county, to appear before the Board at their annual meeting and to show cause, if any, why they should not be removed from office for failure to perform

all of their duties as health officers. I am glad to report that this notification has had the effect of stimulating these officers to the performance of their duty, and the reports of inspection of hotels, in their respective counties, together with their monthly reports are coming in better; which, together with their statement that they expect to be more prompt in the future, constrains me to recommend that the matter be indefinitely postponed.

DIVISION OF WATER AND SEWAGE.

The work in the division of water and sewage has been very heavy during the past year, particularly the past quarter, as might naturally be expected with the favorable conditions of approaching summer. In the annual report of our engineer, it is observed that several millions of dollars have been expended during the past year on the construction of sewerage systems and waterworks in the cities of this state; and when it is remembered that all this vast amount of public improvement is required to have the careful scrutiny, examination and survey of some one of the water and sewage division, which, if properly done, takes much time and travel, you may then have somewhat of an understanding, and I am sure a high appreciation, not only of the large volume of business transacted in this division, but something of its tremendous importance to the citizens of this state.

I had a conference with Director Smith and Chief Hydrographer Leighton of the United States Geological Survey while in Washington, and succeeded in making final and definite arrangements for the publication of the water survey of Kansas, which was made by Mr. Horatio N. Parker of the Geological Survey in conjunction with the State Board of Health several years ago; the report of which has, for one reason and another, been unpublished until the present time.

Many important problems in this division are yet to be solved, particularly that of the pollution of streams by industrial wastes, and it is to be hoped that the coming year will see more time and opportunity to devote to this important problem.

Professor Bailey has been making a sanitary analysis of a large number of waters from the wells used as a source of supply of many of the schools of the state, and also made the analysis of a number of samples of pond ice that is being used for domestic purposes. These have been of great assistance to the department in arriving at a conclusion as to the sanitary quality of these samples of water and ice, and have thus enabled us to give proper advice concerning the same.

DIVISION OF FOOD AND DRUGS.

The inspection of food and drugs has continued, under the supervision of our six traveling inspectors, and it is gratifying to note from the reports that there has been a very considerable improvement in the sanitary condition of places and things under inspection throughout the state. Naturally, after several years spent in an educational propaganda, the time has arrived, as indicated in a former report, when the department should take such means and measures as are necessary for the enforcement of the law. That such enforcement would bring about more or less opposition is to be expected. It is not human nature to take

kindly to prosecution, from any cause whatsoever. The department believes, however, that we have been exceedingly lenient, as indicated by our long period of educational instruction before bringing any cases into court; and we therefore submit that we are entitled to commendation, rather than censure, and to hearty coöperation, rather than a determined purpose to contest the law and to abuse the officers charged with its enforcement. It is scarcely necessary to say that in those prosecutions it has been thought absolutely necessary to make, that there was no thought or intention of malice on the part of the State Board of Health, or any one connected therewith; but, rather, a high regard for the welfare of the consumer, and a profound respect for the majesty of the law, where there was reason to believe that there is either willful intention or a criminal neglect in circumventing the provisions of the law.

I have made it my business to familiarize myself quite thoroughly with the ways and methods of the enforcement of the food and drugs law in other states, and I am satisfied that we have shown greater leniency, and have brought fewer prosecutions, than any other state in the Union where there is anything like an efficient food and drugs act being enforced.

It is evident that very great tact and diplomacy is necessary in the enforcement of this law. It is perhaps unlike the enforcement of any other law requiring inspection. The banker, for illustration, may not reasonably object to an inspector going through the records of his bank, because he has in his possession the belongings of others; but, in the case of food and drug inspection, the merchandise is personal property, and unless great care is taken, manufacturers and dealers are often inclined to resent interference with what they are inclined to denominate their personal business. Then, again, in the matter of sanitary regulations, it is to be noted that cleanliness is a relative term. Being clean to one person is very apt to be quite a different proposition to another, and so again the greatest care must be taken in order to bring about a hearty coöperation with those whom we desire to change the standard of cleanliness to one fixed by this department.

This is mentioned simply to call attention to what I believe to be a fact, namely, that the wonder is that during three years of active inspection of some 10,000 places so little active opposition has manifested itself and so little bitterness has been engendered over what after all is a most delicate and rather anomalous situation. I believe we are to be congratulated that up to the present time such splendid results have been obtained with so little friction.

With the progress of time and of events, particularly in matters in which the trail has hitherto been unblazed, we may, if we keep our eyes and ears open, learn much that may be of value in the future, and to guide us in making or revising our former opinions to our rules and regulations already made. When those in charge of the enforcement of the national food and drugs act provided a method whereby manufacturers and jobbers might obtain a guaranty serial number, placing the same upon foods and drugs, it was thought that a short cut was made toward eliminating all the innocent violators of the law, excepting the chief ones, whose product was, as a matter of fact, adulterated or mis-

branded, and yet make use of the guaranty serial number. This is a most admirable and fair looking theory, but in practice, so far as the individual states are concerned, both as applied to the national and state serial numbers, it has, in my judgment, been the greatest blunder in the enforcement of the law and the most serious obstacle in the way of truthful labels and statements. It so happens that the average consumer, with scarcely an exception, believes that every package on which appears the legend of the guaranty serial number is beyond any question not only free from adulteration and misbranding, but also is of the highest quality of its kind; and I verily believe that the majority of the consumers believe that the guarantee means that the government or the state, as the case may be, has guaranteed the aforesaid article to be free from adulteration and misbranding. Not only is the consumer thus almost universally deceived, but from three-fourths to nine-tenths of the retail dealers have not learned the real significance of the guaranty serial number, and are of the same impression as the consumer in the cases above. It follows, therefore, that the most glaringly misleading statement, so far as the average retailer or consumer is concerned, that appears upon these articles of foods and drugs bearing the serial number is that of the serial number itself. That is to say, the impression and final result upon the retail dealer and consumer is that of a misleading statement. In addition to all this, the consumer is not benefited in any way that might offset this deception, for, indeed, he has no part or interest in the guaranty, that matter being entirely a provision of the law to protect the dealer as against the manufacturer or the jobber, as the case may be. Nor is the retail dealer benefited by the guaranty serial number, unless it should chance that he has neglected to secure the guaranty upon his invoice, or the blanket guaranty, which is now so generally used by the larger jobbers and manufacturers. But this same retailer is daily being deceived in the same manner as the consumer in believing that he is buying and selling an article that meets all the requirements of the law, and is of the highest grade and quality. In view of these facts, it is recommended that regulation 7 (form of guaranty) be amended to eliminate the serial number feature, and that guarantees under the food and drugs law be confined entirely to guarantee upon invoice or upon the general blanket guarantee.

At a meeting of the Kansas car-lot egg shippers' association, held at the Throop hotel in this city on Thursday, June 9, 1910, the question of the elimination of eggs unfit for food purposes was discussed, in all its various angles and phases. The association kindly invited Dean Webster of the dairy division, and Professor Phillips, poultry husbandman, both of the State Agricultural College, and Mr. Lamon of the bureau of animal industry, and your secretary to meet with them. The net result of the meeting was the passage of the following resolutions: That cards of warning and circular letters be prepared and mailed to every merchant in the state of Kansas, giving information as to the provisions of the food and drugs law on the sale of eggs unfit for food. That buyers send circulars to their patrons relative to their attitude on the marketing of eggs. That the term designating "loss off" includes all "rots," "spots," "blood rings" and "leakers." That buying on a loss off basis should be

commenced July 1, 1910; and that members shall sign an agreement in conformity with the above.

If the egg buyers are genuinely in earnest, as they seem to be, and will stick to this agreement, there can be no question but what the Kansas egg product will soon bear a better reputation in the eastern market than it does to-day.

One of my discoveries while east, recently, was that the Kansas egg did not bear a good name, which was undoubtedly brought about by the fact that, generally speaking, hitherto everything enclosed in a shell was shipped. Moreover the government has of late been exceedingly active in the seizure of eggs entering into interstate commerce as unfit for food. So it behooves the dealers, as well as the producers, in this state to not only avoid trouble with the federal government in this particular, but what is of more importance, to take such action as will eliminate the rotten eggs, and thereby place the Kansas product on the plane of quality and price to which she naturally belongs. It is self-evident that this can only be accomplished by eliminating the eggs unfit for food by the producers of Kansas. The encouraging feature of this movement is that there is not a dissenting voice as to the necessity and advisability of such action. It would appear, therefore, that the plans should be carried out without much difficulty, and that in a year from this time the price current on Kansas eggs in the East will be quoted alongside that of Michigan and other northern states.

ANNUAL CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH.

The annual conference of state and provincial boards of health was held in Washington, as is customary, with what is said to be the largest attendance of state and provincial health officers that has ever been held in the history of the association. The papers and discussions were of a high order of excellence, although, as might be expected, the scientists and sanitarians were not always agreed on the topic under discussion. To illustrate: The committee appointed to report on the revision of regulations relating to the transportation of the dead made a most excellent report, founded upon an exhaustive and extensive investigation of the entire subject of transportation. Dr. Swartz, health officer of Rhode Island, made a vicious, although good-natured, attack upon the committee's report, from a scientific standpoint. He argued, many of the precautions recommended by the committee as rules for the transportation of the dead were unnecessary, in that it was a scientific absurdity that a dis-interred body could possibly be a source of danger to the public health; that the germs of decomposition were actively antagonistic to pathogenic germs, and that the public had better cause to fear the relatives and friends who accompanied the remains of a body that had recently died from a contagious or infectious disease than any real exposure of the public by reason of the shipment of the dead body. But the association finally recognized the fact, which was stated by your secretary and which was emphasized by Mr. Anderson of the marine hospital service, that there are many scientific problems that have been worked out, which the people are not yet ready to receive; and that we had, particularly in matters of this kind, to give some recognition to public opinion and in-

dividual sentiment. Accordingly the committee was continued and instructed to report at the next annual meeting.

It was my pleasure to present a so-called model law for state and local meat inspection, which was adopted by the association and ordered printed in the proceedings. The following subjects were discussed and elicited much valuable information and discussion: Ophthalmia Neonatorum, The Plague Problem and Extermination of Rats, The Pollution of Streams, Sewage Disposal, The Welfare of Infants and Children, Control of Rabies, Sanitation of Industrial Camps, Epidemic Anterior Poliomyelitis, Legislation Relating to Tuberculosis, Medical Inspection of Schools, in addition to the two other subjects above related.

The following week the conference of state and territorial boards of health, with the surgeon general of the public health and marine hospital service was held, as provided by an act of Congress. This meeting, too, was of very great interest and importance. Among the principal subjects discussed was that of the report of morbidity statistics. I am gratified to know that Kansas appeared upon the map associated with only three other states in the monthly tabulation and report of the morbidity statistics of contagious and infectious diseases. The discussion of the control of hookworm disease and that of pellagra was exceedingly interesting, although, I am glad to say, of little practical value to this department, in that there are no known cases in this state at the present time. The control of rabies was also again discussed, and a statement was made by the surgeon general that the disease was very greatly on the increase throughout the United States; that large numbers of animals as well as humans had been afflicted during the past year; and the officers expressed themselves as believing that the conditions were but little short of alarming. State boards of health will be supplied by the surgeon general with the Pasteur treatment upon request.

In this conference also the question of transporting the dead was discussed, and again our friend Swartz unloosed his rapid-fire batteries upon the question, with a most laughable although highly instructive speech. The plague situation was carefully discussed by experts of the marine hospital service, which left the impression that the question of rat extermination should be systematically and diligently pursued by all our interior cities as well as the ports of entry along our seacoast.

The convention for the revision of the United States Pharmacopœia was the most largely attended convention that has ever been held in the history of the revision of the United States Pharmacopœia. Much interest was manifested in the proceedings; and a rather spirited contest was perpetrated in the election of officers, which resulted in the election, finally, of Dr. Harvey W. Wiley for president for the next ten years. The committee of revision of twenty-five was increased to fifty, and the present committee now is composed of thirty-five pharmacists and chemists and fifteen practicing physicians. It is noteworthy that among these fifteen are the names of Doctors Reid Hunt, J. F. Anderson, and the world famous Rosenau, all of the public health and marine hospital service, and among the pharmacists our own Prof. L. E. Sayre.

The sentiment was expressed that all drugs that had practically become obsolete or were of doubtful therapeutic value should be eliminated,

and that only those that had been most thoroughly and scientifically worked out and generally accepted by the profession should hereafter be included. Undoubtedly diphtheria antitoxin and vaccine virus, with perhaps other sera, will be added to the next edition of the United States Pharmacopœia. It was strongly urged that every practicing pharmacist and every practicing physician should have in his office a copy of the next Pharmacopœia.

STATE INSTITUTIONS.

I desire to call the attention of the Board to the question of the sanitary inspection of the state institutions, that have not yet been made during the past year. Incidentally I might report that within the past few months it has so come about that I had the opportunity of inspecting the State Penitentiary and the State Reformatory at Hutchinson; the latter institution in company with our engineer. There were extensive repairs going on at Hutchinson, at this time, which were very much needed from a sanitary point of view, and which when completed will add very materially to the welfare and comfort of the inmates. It is suggested, however, that a committee of the Board make another inspection, not only of these places but of all the state institutions, at the earliest possible date.

GENERAL.

The work of this department for the past year has been, so far as volume and activity is concerned, what might be denominated strenuous. Indeed, the work has required the help of two additional clerks, that had not been provided for by the legislature, and which it has been necessary to pay out of our miscellaneous fund.

Since the last annual meeting a tuberculosis exhibit has been assembled and put upon the road and has, I believe, done splendid work in the matter of carrying out the original intention, namely, a state-wide educational campaign, and half of the state has been covered and more than 125,000 people have seen the exhibit and heard the lectures.

Since the last annual meeting the common drinking cup has been abolished upon railroad trains, and in public and private schools. This innovation, which was scarcely short of a revolution, in sanitary matters, has now become exceedingly popular, not only in this state but in other states that have since adopted the same measure. Comments by the leading newspapers and magazines of the country have universally expressed approval, all of which has resulted in the inauguration of sanitary drinking fountains all over the land, not only in public schools, but in public places.

Since the last annual meeting standards for foods and drugs have been adopted and the bleached flour rules promulgated, all of which has been a step forward in food and drug control, and which has been quite generally received with approval.

The annual anti-fly campaign was taken up as usual this year, by the publication of our customary April fly BULLETIN, and the sending of the fly poster to every post office in the state, which was accompanied by the following letter:

"May 21, 1910.

"TO THE POSTMASTER—I am sending you another copy of the fly poster with the request that you display it in the post office in place of the one

which we sent to you last year, as that one is no doubt more or less soiled by this time. At the same time I wish to take this opportunity to express my appreciation of the active response with which you favored our request last year.

"A great amount of good was accomplished and it is only by such hearty coöperation that it is at all possible to carry on the campaign along the lines which have been planned in Kansas.

"Nine thousand copies of the April BULLETIN, devoted exclusively to the fly campaign, were sent over the state. If you did not receive a copy we will be glad to send one to you upon request.

"Again thanking you for your aid in this campaign the past year and bespeaking your further coöperation, I am

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

In addition to the usual campaign every mayor has been asked to have their city pass ordinances looking toward the abolishment of the breeding places of the fly. This action was set forth in a circular letter to the various city officials which was as follows:

"To the City Officials of Kansas:

"May 2, 1910.

"GENTLEMEN—Under separate cover I am sending you a copy of our annual fly BULLETIN, and invite your attention to the suggested ordinance, which if enacted and enforced will, we believe, do much towards abating the fly nuisance, and incidentally protect the lives and health of your people to a remarkable degree.

"The BULLETIN sets forth the dangers of the common house fly, and the necessity for cities to take such action as will at least minimize these dangers.

"A national anti-fly campaign is on, and it is confidently hoped that Kansas municipalities will retain their reputation for 'doing things worth while.'

"This department is at your service in this or any other public health measure that we may be of assistance.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

And last, although by no means least, the distribution of free diphtheria antitoxin has been established, upon the theory that the lives of the poor children of this state are worth saving, and that the control of diphtheria epidemics could only be accomplished by this means.

A LOOK INTO THE FUTURE.

I believe that every member of the State Board of Health has a justifiable pride in the nature, amount, and quality of the work done during the past few years. In many respects Kansas is in the forefront of the procession, particularly as it relates to sanitation. But, looking into the future, we realize that much is yet to be accomplished, and thus we are planning for advancement and progress to the end that this department of the state's activities may be brought to the highest degree of efficiency. It is with pleasure, therefore, that I have to inform you that arrangements have been consummated with the chancellor of the University for holding a summer school for health officers in 1911. One other state, New York, held their first summer school of instruction for health officers during the past month, and it is reported by Health Commissioner Porter to be an unqualified success.

The most skillful physicians and surgeons may really know little about public health work, for that work has grown to be a specialty in and of itself. It therefore follows that if Kansas is to have a highly efficient sanitary organization her health officers must be instructed

and trained along these advanced lines of up-to-date hygiene. The following letter from the chancellor is submitted for your information and approval:

"June 10, 1910.

"MY DEAR DOCTOR CRUMBINE—I should be glad to have you announce, if it meets your approval, at the meeting of county and city health officers, which I understand comes next week, that the University of Kansas will offer next summer, summer courses for such officers. The work will consist of lectures in the morning and laboratory work in the afternoon, and will continue to such time as may be found after consultation with you to be most convenient. If it seems wise to you to give them immediately after the meeting of the county and city officers, which I understand is held at Topeka, it can be so arranged. In this work we should hope to have you not only lecture but act as adviser in regard to the courses to be given and their general conduct. I wish you would also, if it seems wise to you, communicate this proposition to the State Board of Health with the desire on our part that such members of the State Board of Health as you might select should also lecture during the time of these courses. I suppose probably that the personnel of the Board giving lectures might very likely change each year according to the courses given and the general convenience of the gentlemen themselves. I shall be glad to talk with you in regard to this and other matters at your convenience. With best wishes, I am sincerely yours,

FRANK STRONG, *Chancellor.*"

This course will be given in one week, and will be without expense for tuition to the health officers. I trust this arrangement will meet with your cordial approval. Respectfully submitted.

S. J. CRUMBINE, M. D., *Secretary.*

MINUTES OF ANNUAL MEETING.

JUNE 14, 1910.

The annual meeting of the State Board of Health was held in the office of the secretary, on June 14, 1910. On roll call all of the members of the Board were present excepting Drs. Carver and Huffman, and all of the members of the advisory board excepting Professor Marvin.

The minutes of the last meeting were read and approved.

The secretary's report was then read, and upon motion received and ordered placed on file. The recommendation of the secretary concerning measles was then taken up, whereupon Mr. Deacon, statistician for the Board, presented a tabulation of mortality and morbidity statistics from Kansas and other state boards of health, together with comments from sanitarians and various well-known authors on the matter of measles being considered a disease dangerous to the public health. After a free discussion a committee of three was appointed to formulate the regulation covering the matter of quarantine for measles. Whereupon the president appointed the following

committee: Drs. Aldrich, Milligan, and Thompson. The committee reported and the Board unanimously adopted the following regulation:

"29. *Placarding.* The quarantine law provides that houses where any person is sick with cholera, smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, or any disease dangerous to the public health, shall be immediately placarded, and notice given to the nearest board of health. In addition to these requirements, health officers are also required to placard all houses where there is measles, whooping cough, or chicken pox, and restrain persons so afflicted from attending the public schools, churches or other places of public assemblage. In the case of measles, in addition to the foregoing, it is hereby required that the patient afflicted be effectively isolated or quarantined, and also that those children of the household who have not had the measles be not permitted to attend school or other places of public assemblage."

It was moved and seconded that epidemic anterior poliomyelitis, typhoid fever and ophthalmia neonatorum are reportable diseases, and the secretary was instructed to so inform the local health officers, reports on these diseases being required to be made by the physicians to the local health officers immediately, or within a reasonable time.

The question of delinquent health officers was then taken up, and upon the report of the secretary that their reports for hotel inspection had been made, it was accordingly moved that any further action be indefinitely postponed.

The recommendation that the serial number guaranty be eliminated from regulation 7 of the food and drugs law was approved, and the matter of the change of form for said regulation was referred to the committee on food and drug revision, to report at the next quarterly meeting. It was generally agreed that manufacturers who have printed labels with the Kansas guaranty thereon should be given a reasonable length of time to use up the old labels, but that from this date no new serial guaranty numbers should be issued by the department.

A letter from the chancellor of the University to the State Board of Health, concerning the establishment of a summer school for county health officers for 1911, was then discussed, and upon motion the Board expressed its appreciation of the opportunity and approval of the plans for such a summer school to be held under the supervision of the University and the State Board of Health.

Ex-Senator J. E. Brewer, of Abilene, appeared before the State Board of Health at this time and presented formal charges against an inspector of the department, and presented resolutions, said to have been passed by the retail merchants

association. Whereupon Mr. Welch introduced a resolution providing that a committee of three, composed of the president, the pathologist and the statistician of the Board, be a committee of investigation to hear and take such testimony as Mr. Brewer or the inspector desired to present in the support or the defense of the charges presented. The motion was adopted. After some discussion Mr. Brewer failed to point out to the Board wherein they had made any regulations that were in restraint of trade and of no benefit to the consumer, as it was shown that the matters of which he complained were not regulations made by the Board but statutory laws made and passed by the legislature. Mr. Brewer also admitted that his allusions to "grand-stand playing and political aspirations" were intended for the state administration and not for any members of this department.

The report of the engineer, Professor Hoad, was then read and ordered placed on file.

Professor Bailey then made a brief report of the food analysis and water analysis done in his department for the past year.

Professor Willard made a report on the work of his department for the past year, including the analysis of food samples and original research work pertaining to the matter of the loss of weight of butter claimed to be due to the loss by evaporation of the moisture. These experiments extended over a wide range of time and conditions, and are of great value in the enforcement of the law in that accurate determinations can be made as to the variation of weights due to loss of moisture. He also spoke of investigations in the matter of loss of weight by reason of the evaporation of moisture from flour that follows when stored under normal conditions.

Professor Sayre, drug analyst for the Board, then made his report, preceding the report by the remark that he believed that no more than one part per million of the bleaching agent should be allowed in the bleaching of flour.

The bacteriologist, Dr. Greenfield, then made her report, which showed a gratifying increase in the work of her department.

The annual election of officers resulted in the following officers being elected: Dr. Clay E. Coburn, president; vice president, Dr. B. J. Alexander; the entire advisory board was re-elected.

A petition from the citizens of Reno county in regard to the condition of Cow creek in Hutchinson being overloaded with sewage and creating a local nuisance was then read, and upon motion the matter was referred to the division of water and sewage for investigation and such action as the facts, upon investigation, seemed to warrant.

Upon motion it was decided to hold the first quarterly meeting in the city of Hutchinson, at such time as would be called by the president.

The following bills were then audited and allowed:

Dr. J. A. Milligan	\$16 70
Dr. B. J. Alexander	10 76
Dr. V. C. Eddy	23 00
Dr. C. E. Coburn	7 70
Dr. C. H. Lerrigo	5 00
Dr. H. L. Aldrich	23 83
Dr. W. O. Thompson	26 40
Mr. C. D. Welch	18 04
Prof. E. H. S. Bailey	1 98
Prof. J. T. Willard	2 33
Prof. W. C. Hoad	3 21
Prof. L. E. Sayre	1 58

Upon motion the Board adjourned until 10 A. M., of the 15th, to meet with the association of public health officers in their annual conference.

JUNE 15, 10 A. M.

The seventh annual conference of county health officers met in Representative Hall, Wednesday, June 15th. In the absence of the president of the association the secretary called the meeting to order. Upon motion, Dr. Fred Forney, county health officer of Reno county, was elected president *pro tem.*; whereupon the following program was rendered:

Measles, by Mr. W. J. V. Deacon, statistician, State Board of Health. General discussion.

The Inspection of Schools and School Houses, a general discussion by health officers present.

Water Pollution and its Dangers, by Professor Wm. C. Hoad, engineer State Board of Health, followed by general discussion.

The Duties of a City Health Department, by Dr. M. T. Sudler, dean of scientific department, school of medicine, University of Kansas. General discussion, which was followed by the announcement of the secretary of the State Board of Health that a summer school of instruction would be held in the University of Kansas in 1911, and upon a showing of hands sixteen health officers pledged themselves to attend this school.

The Conditions of Hotels in My County, by Dr. H. Whitworth, county health officer of Ford county.

Question-box on the difficulties and problems of the job, led by Secretary Crumbine of the State Board of Health.

Tuberculosis and the Conservation of Human Life, by Dr. D. T. Nicoll, county health officer of Shawnee county. General discussion.

A constitution and by-laws was adopted by the association and the following officers elected for the ensuing year: President, Dr. Fred A. Forney, Reno county; vice president, Dr. D. T. Nicoll, Shawnee county; secretary, Dr. J. J. Sippy, Sumner county; treasurer, Dr. Alfred O'Donnell, Ellsworth county. Adjourned.

FIRST QUARTERLY REPORT OF SECRETARY.

MEETING HELD AT HUTCHINSON, KAN.

SEPTEMBER 14 and 15, 1910.

MR. PRESIDENT AND GENTLEMEN OF THE BOARD—Immediately after the annual meeting held in June, the president, Dr. Clay E. Coburn, appointed the various committees to visit the different state institutions, for the purpose of making a sanitary inspection of the same, their findings to be reported to the Board at some subsequent meeting.

COMMITTEES.

Osawatomie State Hospital, Drs. Milligan and Coburn, and Professor Wm. C. Hoad.

Parsons Epileptic State Hospital, Drs. Aldrich, Huffman and Carver.

Topeka State Hospital for the Insane, and the State Reform School, Drs. Lerrigo, Magee and Greenfield.

Olathe State School for the Blind, Professor F. O. Marvin, and Drs. Milligan and Lerrigo.

Atchison State Orphans' School, Drs. Alexander and Coburn.

Hutchinson State Reformatory, Dr. Thompson, Prof. Wm. C. Hoad, and Mr. W. J. V. Deacon.

Kansas City Institute for the Blind, Prof. E. H. S. Bailey, and Drs. Magee and Coburn.

Kansas State University, Lawrence, Drs. Huffman, Alexander and Lerrigo.

Kansas State Agricultural College, at Manhattan, Drs. Lerrigo, Eddy and Coburn.

State Normal School, at Emporia, Drs. Aldrich and Milligan, and Mr. Deacon.

State Reform School for Girls, at Beloit, Dr. Eddy and Professor Willard.

Branch State Normal School, at Hays, Dr. Crumbine.

Old Soldiers' Home, at Fort Dodge, Drs. Magee, Thompson and Crumbine.

Mother Bickerdyke Home, at Ellsworth, Drs. Eddy and Lerrigo.

The president also appointed the secretary as *ex officio* member of all the committees and instructed him whenever possible to accompany the committees in their tours of inspection. The secretary has only been able thus far to visit three institutions with the committees, that at Osa-

watomie, the University and the Hutchinson Reformatory. . The chairmen of the various committees will make their reports in person to the Board.

MEASLES.

In accordance with the instructions of the State Board of Health at its annual meeting, the following circular letter was sent to the county and municipal health officers, concerning the change of rules in regard to quarantine of measles:

"To County and Municipal Health Officers:

"June 27, 1910.

"The attention of all health officers is called to the article in the June BULLETIN, under the caption 'Measles.' It is suggested that this information be given the widest publicity possible by being published in all your county papers; also, a circular letter addressed to each physician in your county, advising him that hereafter all cases of measles must be quarantined and contacts that have not previously had the disease be NOT allowed to attend places of public assemblage.

"A reference to the BULLETINS of this year will show you the relatively high mortality from measles as compared with other contagious diseases.

"Kindly attend to this matter at once, as it is a matter of the greatest public importance.

Cordially yours,

S. J. CRUMBINE, M. D., *Secretary.*"

CONTROL OF COMMUNICABLE DISEASES IN THE PUBLIC SCHOOLS.

Continuing the policy of the Board in their educational propaganda for the control of contagious and infectious diseases, the following letter was addressed to the state superintendent of public instruction:

"Superintendent E. T. Fairchild, State House:

"June 18, 1910.

"DEAR SIR—At the annual conference of public health officers held in Representative Hall on Tuesday the 14th the question of the control of epidemic diseases of childhood was thoroughly discussed, and it was unanimously agreed that these diseases could never be efficiently controlled, particularly the disease of measles, until school teachers had such fundamental knowledge as would enable them to determine, with some degree of accuracy, the beginning or prevalence of these diseases among the pupils, so they could be sent home at an early stage of the disease.

"In order, therefore, that this much desired result may be brought about, it was suggested that the county health officers be invited to address the teachers in the various county institutes, at some time during the institutional periods, on the subject of the early recognition and control of infectious diseases of childhood as applied to the public schools. It is confidently believed that much of the loss of time by pupils, and often the dismissal of school itself, could be avoided if intelligent understanding by the teacher of these diseases, together with prompt action in the elimination of suspects, should be taken.

"We trust, therefore, your department may be so good as to make request of all normal instructors that health officers be given the opportunity of presenting this subject to the teachers of their county.

"Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*"

Superintendent Fairchild immediately issued a letter to county superintendents, a copy of which is as follows:

"To County Superintendents:

"June 20, 1910.

"MY DEAR SUPERINTENDENT—Secretary S. J. Crumbine has just called at my office and suggested that wherever possible the county health officer be invited to appear before the institute and discuss the question of the controlling of epidemic diseases of childhood.

"This request grows out of discussions at the recent annual conference

of public health officers held in Topeka. It was unanimously agreed at this conference that these diseases could never be efficiently controlled, particularly the disease of measles, until school teachers have such fundamental knowledge as would enable them to determine, with some degree of accuracy, the beginning or prevalence of these diseases among the pupils, so they could be sent home at an early stage of the disease.

"In order, therefore, that this much desired result may be brought about, it was suggested that the county health officers be invited to address the teachers in the various county institutes, at some time during the institutional periods, on the subject of the early recognition and control of infectious diseases of childhood as applied to the public schools. It is confidently believed that much of the loss of time by pupils, and often the dismissal of school itself, could be avoided if intelligent understanding by the teacher of these diseases, together with prompt action in the elimination of suspects, should be taken.

"This is an excellent suggestion, and I sincerely trust that you may be able to put it in effect even though the time of your institute is short.

"Sincerely yours, E. T. FAIRCHILD, *State Supt. Pub. Instruction.*"

The suggestions contained in these two letters were, I believe, quite generally carried out, and must of necessity eventually have its effect in the control of these diseases of childhood in the public schools. It has been agreed with the state superintendent that this same policy will be observed next year in the county normal institutes; which it is to be hoped will become a fixed policy of all future annual institutes.

The following circular letter was issued to county health officers for the annual inspection and fumigation of schoolhouses within their respective jurisdiction:

"To County and Municipal Health Officers:

"July 13, 1910.

"The department desires to remind you that the 'vacation time' is here, which is the time for the annual disinfection of all schoolhouses, and the inspection of the water supply as to its wholesomeness, and the toilets as to their sanitary condition. It is urged that if the work is not yet done, that it be taken up with the school authorities at once, in order that your work may be accomplished before the fall term of school begins.

"Samples of suspected water can be sent to Prof. C. C. Young, Kansas University, Lawrence, for analysis, properly marked for identification, charges prepaid. Sample should be at least a quart in amount in a sterile bottle with a sterile cork; these analyses will be made without cost.

"Written orders for correction of insanitary conditions should be served on the clerk of the school board.

"May I also call your attention to the semiannual inspection of slaughterhouses? And the hope is expressed that you may insist, by law if necessary, that all slaughterhouses be made to comply with the provisions of the law.

"Please to report any new cases of anterior poliomyelitis by wire.

"Fraternally, S. J. CRUMBINE, *M. D., Secretary.*"

FOOD AND DRUGS.

EGGS UNFIT FOR FOOD.

While in Washington last May I discovered that the federal government was exceedingly active in the matter of the seizure of eggs, dried eggs and frozen egg meats that were unfit for food and which had entered into interstate commerce. I had the opportunity of attending a hearing on this subject, held by the department of food and drug inspection in the bureau of chemistry of the agricultural department. The question of the sale of eggs unfit for food has been one that has given me

considerable concern for the past few years, but in which the department was unable to better to any appreciable degree the condition of the product as marketed in this state or the value of the Kansas product upon the eastern market. We came to the conclusion that the only way in which the egg question could be solved, with any hope for a successful conclusion, was to require all dealers to purchase their eggs on what is known as the "loss off" basis; that is, to candle them, rejecting all eggs that were unfit for food, when they first came on the market from the farmer or egg producer.

The activity of the federal government in this direction convinced me that some radical action should be taken by the Kansas division of food and drugs, not only in order to save our large car-lot shippers from annoyance, and perhaps serious trouble, but, what is of greater importance, to save the name of the Kansas product on the eastern markets, and prevent numerous seizures of eggs in interstate commerce, which must inevitably occur unless all eggs are first candled before purchased and shipped. Accordingly a meeting of the car-lot egg shippers was called to meet at the Throop hotel, together with Dean Webster of the dairy department, Professor Phillips, professor of poultry husbandry of the State Agricultural College, and your secretary, for the purpose of devising ways and means to bring about the purchase of eggs on the "loss off" basis.

It is exceedingly gratifying to note that, with but two or three exceptions, the car-lot shippers were enthusiastically in favor of indorsing an order requiring the candling of all eggs before purchase. And before the meeting adjourned an agreement was entered into, and signed by all present, that beginning July 1st all eggs should be bought on the "loss off" basis. On June 13 the following circular letter, inclosing a placard or warning sign, was sent to each dealer in this state:

"To the Egg Dealers of Kansas:

"June 13, 1910.

"I am inclosing herewith a card which I respectfully request be posted in that part of your store where eggs are handled, and where it will be readily seen by those bringing in eggs to sell.

"The sale or offering for sale of eggs not fit for food is not only unlawful, but their entry into the channels of trade has the effect of reducing the price of the Kansas product below the current prices of the market, the loss of which is, of course, borne by the producer and dealer. It is to your advantage, therefore, to use the greatest care in culling out all eggs unfit for food.

"From and after July 1, 1910, all eggs should be bought and sold only on the 'loss off' basis, in order that the provisions of the law may be faithfully observed.

"The department expresses a hope that we may have your coöperation in this movement.

Very truly yours,

KANSAS STATE BOARD OF HEALTH,

By S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector."

The warning card read as follows:

"WARNING! BAD EGGS!

"The Kansas food and drugs law forbids the sale or offering for sale of eggs unfit for human food. 'Sec. 7, subdivision sixth: If it consists in whole or in part of a filthy, decomposed, tainted or putrid animal or

vegetable substance,' etc. Reg. 11, Par. C: 'The sale, keeping for sale, or offering for sale of tainted or rotten eggs is prohibited.'

"Inspectors of this department, and all police officers of the state, are instructed to enforce these provisions of the law."

KANSAS STATE BOARD OF HEALTH,
By Chief Food and Drug Inspector.

"Topeka, Kan., June 11, 1910."

Communication was entered into with the food commissioners of the states of Missouri, Oklahoma and Nebraska, advising them of our action, and requesting coöperation along the same lines, to the end that our state-line dealers might not suffer from unfair competition. Doctor Cutler, food and drug commissioner of Missouri, Doctor J. C. Mahr, secretary state board of health of Oklahoma, and Mr. S. L. Maines, state food commissioner of Nebraska, very cordially entered into our plans and are coöperating with Kansas in the enforcement of these regulations.

About this time the board of food and drug inspection at Washington issued a circular letter covering the manufacture of desiccated eggs, which is herewith presented, with the recommendation that these suggestions be adopted as the rules of the State Board of Health controlling the manufacture and sale of desiccated eggs:

"June 1, 1910.

"WHEREAS, there is no government standard for the grades of eggs used in the various egg products, the board in reply to a request of several desiccated egg dealers, offers the following statement:

"It suggests that if the product which you prepare comply with the law in all respects there will be no seizure nor will your business in interstate commerce be disturbed in any way. However, the following suggestions are made for your consideration:

"In the first place you should avoid the use of any kind of spot eggs in the manufacture of your desiccated products.

"All eggs as soon as broken should go immediately to cold storage and be kept in thoroughly sterilized vessels and free from outside contamination if the broken eggs are not to be used at once for drying. In drying, the air should be thoroughly freed from bacteria by some means, such as the use of absorbent cotton or any other practical method.

"All sanitary precautions should be used and as much care should be exercised in handling eggs as in the best equipped and most modern systems of handling milk to prevent contamination and to keep down bacterial growth after the eggs are broken.

"It is also questionable practice to use the drippings from egg shells.

"Any eggs that are at all questionable should not be used for the manufacture of desiccated eggs for food purposes.

"All 'dirties' should be broken carefully to avoid the dislodging of 'dirt' from the shells, as this is a bad source of contamination.

"All desiccated eggs should be stored under sanitary conditions.

"The use of the centrifugal machine for the breaking of eggs is also questionable.

"The same suggestions apply to frozen eggs as well."

On August 19th the following circular letter was issued to the inspectors:

"Circular Letter No. 39.

"To Food and Drug Inspectors:

"It is believed that the addition of pieces of lemon or lemon rinds to imitation lemonade, or the addition of color of any kind, is for the

purpose of deception and is therefore illegal; the same principle applies to other imitation ades or ciders.

"Where imitation lemonade or orangeade is sold from a large container, such container must be plainly labeled with the word 'imitation,' in letters at least one-half inch high, and so placed as to be in plain view of the customer.

"The 'crying or barking' of lemonade or orangeade or cider, when imitation products are served, is held to be in violation of regulation 18, paragraph e, which extends to 'oral statements by the seller calculated or liable to mislead or deceive the purchaser in any respect, and cause him to believe that he is receiving goods of a different character from that of those actually delivered'; such practice is therefore illegal.

"Citric acid only, with appropriate flavor and sugar, will be permitted to be used in imitation products. The use of tartaric acid or saccharine is prohibited.

"Every vendor of soft drinks of any kind must keep product protected from flies or dust, and have a suitable place for the thorough washing and cleansing of glasses or cups after each time used.

"Very truly yours, S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

On August 23d the following letter was issued to fair associations of Kansas:

"I desire to again invite your attention to the necessity of providing ample and properly located toilet accommodations on the fair grounds for the accommodation of the large crowds of people who annually attend the Kansas fairs. While these places should be conveniently located, yet they must be sufficiently removed from the places where food and drinks are sold, as to not be a menace to such foods and drinks by flies alternately going from one place to the other. Great care should be taken that all toilets be kept clean and sanitary, which can only be done by frequent inspection and cleaning; for it is to be regretted that there are a few human swine in every gathering of this kind, who wantonly befoul every place they go to.

"All food and drinks offered for sale must be properly protected from contamination by dust or flies, and all imitation drinks must be plainly labeled *and sold* as such, as per circular letter to inspectors herewith inclosed. We will esteem it a favor, if you will promptly report to this office all violations of the food laws and the sanitary requirements promulgated thereunder.

Very truly yours,
S. J. CRUMBINE, M. D., *Secretary.*"

ANTERIOR POLIOMYELITIS.

On July 7th your secretary, in company with Dr. A. L. Skoog, of Kansas City, made a trip to the northwest counties for the purpose of investigating the physical conditions of some of the children who suffered from anterior poliomyelitis in last year's epidemic. A few hours before leaving on this trip I received a telegram to come to Phillips county to investigate a presumable outbreak of spinal meningitis, where four cases had occurred in one family with two deaths. We went direct to Phillips county and there discovered that the 1910 epidemic of anterior poliomyelitis had begun.

The result of the investigation of last year's cases was too small in numbers to draw definite conclusions as to percentages of recovery, etc., but our incomplete conclusions are reviewed in the July BULLETIN, which is devoted to the study of last year's epidemic. One thing is to be noted, that is not included in the BULLETIN report, namely: That those cases that were under the care of intelligent physicians and that had the co-

operation of persistent, caretaking and intelligent parents, showed that such persistence and care counted greatly in the percentages of recovery or partial recovery; and contrariwise, those cases that had made little if any progress in the recovery from the paralyzes were found to be cases that had had but little if any medical or parental care and attention, so far as means directed towards their recovery were concerned.

On July 13th the following note of warning was sent to county and municipal health officers:

"To County and Municipal Health Officers:

"It seems almost certain that we will have another epidemic of anterior poliomyelitis. Four cases have already occurred in Phillips county, and one case reported this morning from Brown county, with a newspaper report of a case in Kingman county.

"Flexner, of the Rockefeller institute, has demonstrated that the infectious agent is eliminated through the nasal and pharyngeal discharges, and it is likely that the fecal discharges are also infective, owing to the fact that young children usually swallow the mucous secretions of the throat; the findings of Flexner, together with the clinical history of the epidemic, proves it to be a disease of highly infectious character; and it is therefore ordered that all cases be required to be rigidly quarantined, in the usual way, separating as early as possible the sick from the well children of the afflicted household, and seeing to it that the nasal, pharyngeal and fecal discharges be properly and effectively sterilized. Individual drinking and eating utensils should be used, and the fly excluded from the sick room to the greatest extent possible. Outside toilets should be made fly proof, and a general sanitary survey of the premises made, and insanitary conditions promptly remedied. Thorough and effective disinfection must be practiced after the termination of every case.

"The extent of this year's epidemic will, in a measure at least, be conditioned upon the vigilance and energy of health officers in combating the spread of the disease. We are, therefore, counting on you to use prompt and energetic measures in every case in your jurisdiction. Report of new cases should be made by wire to this department.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

On July 23d the State Board of Health was called in extra session for the purpose of taking such action as seemed to be necessary to obstruct the progress of the epidemic, which at that time seemed certain to sweep the state.

MINUTES OF THE SPECIAL MEETING.

On July 23d a majority of the Board met in extraordinary session in the office of the secretary, for the purpose of taking some action concerning the epidemic of anterior poliomyelitis which seemed to threaten the state. After an extended verbal report by the secretary, and discussion by the members of the Board, the following statement was unanimously adopted, and the secretary instructed to give copies of the same to the public press, and publish it in the BULLETIN, which was accordingly done.

"STATEMENT.

"The State Board of Health believes that in the interest of public health and safety the following statement should be made: 'There has been reported to the state department of health to date twenty-three cases of anterior poliomyelitis, commonly called infantile paralysis, with seven deaths. No doubt there are an unknown number of other cases not reported or unrecognized because of their mildness. Last year there were approximately one hundred cases in the state, although at this time

there were not as many cases reported as we now have; this would seem to indicate the need of special vigilance and care of both physicians and parents, to the end that further progress of the disease may be stayed; therefore, we urgently request that physicians promptly report all cases to the local board of health as soon as discovered, as required by law, so that effective isolation be established and the public health be safeguarded. In a letter just received from Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, under date of July 19, he expresses the belief that rigid quarantine measures will do much toward the control of the disease: Unless the Board have the active coöperation of the physicians, these means of control will be ineffective. This is no time for quibbling or academic discussions, but rather of hearty coöperation against a common enemy.

"To the people the following suggestions are offered:

"*First.*—To watch the diet, giving only reasonable quantities of wholesome, nutritious food, especially avoiding anything likely to upset the stomach, poor milk, unripe fruit or vegetables if they have been exposed to dust.

"*Second.*—To watch exercise, preventing any excessive effort or fatigue, even at play, particularly in the sun and in hot weather.

"*Third.*—To watch the bowels, avoiding constipating foods, or sluggishness of the bowels from any cause. Secure, by treatment if need be, free daily evacuations.

"*Fourth.*—To watch the children's playmates and to avoid even distant association with other children sick with this disease, or with anything resembling it; or with the members, including adults, of families in which the disease exists.

"*Fifth.*—To watch the sick children themselves; confine them to their own premises; destroy or disinfect the discharges of the throat, nose, bladder and bowels; prevent their association with anyone but an attendant who does nothing but care for them; in the case of death, allow a private funeral only.

"*Sixth.*—In the event of any child showing symptoms which are usual to the beginning of an attack of poliomyelitis (fever, headache, pain, constipation, vomiting), remember that while these symptoms may mean nothing but a passing disturbance, they may be the first stages of poliomyelitis; call a physician at once, and meantime, keep the child quiet. If the child seems to recover almost wholly in two to four days, do not remit watchfulness, for in poliomyelitis the initial symptoms, after lasting two or four days, often disappear for a day or two, to be followed then by a return of the symptoms and paralysis.

"*Seventh.*—We are still far from knowing all that we should know of poliomyelitis, although we have learned a great deal since last year. The study of the internal organs of patients who have died of the disease is essential to further progress. It should be regarded as the duty of all good citizens to allow such studies to be made in the case of death. All that we know in this state of the pathology of the disease is due to the broad sympathy of sorrowing parents who allow scientific examination of their children, dead of the disease. Only two such noble examples were found last year, and to those parents the rest of the community owe a great debt of gratitude. That other parents should be found willing to emulate them is necessary for further progress in our knowledge and ability to cope with the disease.'

"The above statement was unanimously passed by the State Board of Health in extra session July 23, 1910.

CLAY E. COBURN, M. D., *President.*
S. J. CRUMBINE, M. D., *Secretary.*"

The Board also formally ratified the circular letter addressed to county and municipal health officers concerning the disease.

It was moved and carried that such amount of the emergency fund as

was found to be necessary be used to carry out the work of investigation and prevention of the epidemic.

TYPHOID FEVER.

Several small epidemics of typhoid fever have appeared in various parts of the state, but in no instance has an investigation of the drinking water proven that the disease is from that source; to the contrary, in two instances at least, the burden of proof seems to convict the fly of being the source of infecting food supplies.

WATER AND SEWAGE.

The work in the division of water and sewage continues to be heavy and has occupied practically all the time of the engineer since our annual meeting, and this is the time of year when university professors are expected to be taking their vacation. A number of difficult and far-reaching problems have been undertaken by the division, which will be undoubtedly mentioned by our engineer in his report. On other occasions I have reminded the Board of the increasing work of this class, which has now grown so large and important as to necessitate the securing of an assistant to the engineer, who began his work on the 1st of September. He is a university graduate and has had, since graduation, a considerable amount of experience in municipal engineering, particularly as related to waterworks and sewerage systems. It is recommended that the Board confirm the selection of Mr. N. T. Veatch, assistant engineer to the State Board of Health. Mr. Veatch will be able to relieve Professor Hoad from many of the vexatious and grinding details of the work, which consumes time, and thus enable him to devote his time to the larger and more pressing problems under the water and sewage law.

In accordance with the order of the Board at its annual meeting to investigate the conditions as alleged in the petition addressed to the State Board of Health from the citizens of Reno county residing on or near Cow creek, your engineer and secretary made a visit to Hutchinson, and after a very careful investigation and a thorough study and sanitary survey of Cow creek, its normal flow and the amount of sewage being discharged into it daily, the following conclusions were reached, which were embodied in an order issued to the city of Hutchinson, signed by the secretary and engineer, and approved by the governor and attorney-general:

"Mayor F. L. Martin, Hutchinson, Kan.:

"July 22, 1910.

"DEAR SIR—Following our recent investigation of the pollution of Cow creek by the city sewage of Hutchinson, we have thoroughly considered the conditions at present existing in the stream and have determined that the waters of this stream are now being polluted in a manner prejudicial to the public health. It is our judgment that in order to minimize the danger arising from this pollution the city should promptly and faithfully carry out the following recommendations, namely:

"First.—Men should be sent down along the creek to remove from the channel all brush and trash of every description that would tend to catch debris from the sewage or to produce deposits in the bottom or along the edges of the stream. All this brush and trash should be removed beyond the reach of the ordinary water, and so far as convenient, should be burned. This clearing of the channel should be done throughout the entire length of the stream from the sewer outlet in the city park to the lowest point in the creek at which appreciable deposits of sewage sludge have been observed.

"*Second.*—After the brush and trash have been removed from the channel, the maximum flow which it is possible to secure should be turned into the creek, and while this strong flow of water is passing all sludge and sewage sediment in the stream within a quarter of a mile, or eighty rods, from any residence should be stirred up and allowed to flow away. Especially that part of the sludge should be cleared away that is exposed to the air during the low-water flow in the creek. By cleaning in this manner those stretches of the creek that are within a quarter of a mile of residences the danger from the carrying of disease infection by flies will be reduced to a minimum.

"*Third.*—In order to maintain in the stream the condition brought about by the above-named recommendations, the creek should be patrolled once a week by an intelligent and conscientious employee who will see to it that whatever additional brush and trash shall have found its way into the creek shall be removed, and that incipient sludge deposits shall be stirred up and washed away.

"*Fourth.*—During the construction of the Main street bridge over Cow creek every opportunity should be taken of admitting temporarily to the creek the full discharging capacity of the three 24-inch inlet pipes from the drainage canal. This will help keep the channel of the creek flushed out and will aid in preventing serious deposits of sludge. Also, just as soon as the construction of this bridge will permit, the total ordinary flow of water in the canal should be permanently turned into the creek channel.

"*Fifth.*—The city should now begin to take such steps as will definitely and positively put an end to the increasing pollution of Cow creek by the city's sewage. The volume of sewage has greatly increased and will continued to grow in the future with the increased use of the sewers. The ordinary low-water flow of the creek is already too small to afford a satisfactory degree of dilution and so to dispose of it innocuously, and the extreme low-water flow is probably much too small to prevent the creation of a serious nuisance. This elimination of the pollution of the creek should be brought about either by the purification of the sewage at some point at a considerable distance below the city limits, or by the discharge of the entire sewage of the city direct into the Arkansas river, or by some other satisfactory arrangement.

"We believe that the provisions of the foregoing recommendations are necessary for the protection of the health of the public living near the creek, and that they are reasonable and just. It is therefore ordered that the work included in the recommendations numbered from one to four, inclusive, be begun at once and be carried on as expeditiously as possible, and that the recommendation for the future permanent disposal of the sewage be put into full effect at a date not later than January 1, 1912.

Very truly yours,

S. J. CRUMBINE, M. D., *Secretary.*
WM. C. HOAD, *Engineer.*"

The engineer will report in further detail concerning this matter.

WEIGHTS AND MEASURES LAW.

On June 27 I detailed Food Inspector Kleinhans, in company with the deputy state sealer of weights and measures, Professor Rice of the University, to make a test investigation of the large wagon scales of a number of the more important towns of the state, for the purpose of determining the actual condition of such scales and arriving at an approximate average of the number of those that were illegal under the law. The large wagon scales in the following towns were inspected: Ottawa, Emporia, Newton, Hutchinson, McPherson, Salina, Junction City, Clay Center, Concordia and Atchison.

A total of 143 scales were inspected in these cities, and 49 were con-

demned as being off of actual weight more than ten pounds to the ton, which is the tolerance permitted by the state sealer, and which tolerance is thought to be very liberal. The percentage of condemned scales thus is 35 per cent. It is to be remembered, of course, that some of these scales overweighed and some underweighed. In no instance was there evidence of fraud, but in most instances the error in weight was due to low corners or imperfect setting of the scales, or to the fact that they had been in use so long as to be actually worn out.

Early in August the following circular letter was sent to the various boards of county commissioners throughout the state:

"Hon. Board of County Commissioners:

"August 6, 1910.

"GENTLEMEN—Recently an inspector of this department was detailed to make an inspection of all of the wagon scales in a series of ten of the larger cities of the state, which inspection has just been completed, and is, I believe, the first official inspection of such scales that has ever been made in any of these cities. The inspection developed the fact that approximately 35 per cent of the scales were illegal, in that they were from 10 to 176 pounds off, per ton, occasionally above, but more often below. This is a very serious matter to the farmers of this state who sell their farm products over the scales.

"Your attention is invited to this matter for two reasons: First, inasmuch as we have only four food inspectors for the entire state we can not spare them from their regular work to do any more large scales inspection; second, the weights and measures law provides that the county clerk shall be the county sealer of weights and measures and shall be provided with the necessary test weights and measures to do this work. The cost of one ton of certified weights for testing wagon scales is about \$80, and you are urgently requested to provide your county clerk with these weights in order that every wagon scale in your county may be tested, and the people, especially the farmers, be thus protected.

"The appended list of the more common commodities will illustrate the loss to the seller of these commodities at current prices based on a 5 per cent deviation of scales below the correct weights.

"Very truly yours, S. J. CRUMBINE, M. D., *Secretary.*"

PRODUCT.	Lbs. per bu.	Bu. per ton.	Value per bu.	Value per ton.	Cost per ton to seller if scales underweigh 100 lbs per ton or 5 per cent.
Wheat	60	33½	\$0 94	\$31 33	\$1 57
Corn, shelled	56	35½	57	20 35	1 02
Barley	48	41½	50	20 83	1 04
Oats	32	62½	40	25 00	1 25
Potatoes	60	33½	70	23 33	1 17
Onions	57	35½	50	17 54	88
Tomatoes	56	35½	50	17 85	89
Peaches	48	41½	90	37 50	1 87
Alfalfa seed	60	33½	10 00	333 33	16 67
Hay				10 00	50
Coal				6 50	33
Ice				7 00	35
Broom corn				138 00	6 90
Apples	48	41½	75	31 25	1 56

The work of scale inspection is such an important one that it should not be left to the food and drug inspectors of this department, who are already overburdened with inspection duties; indeed, as indicated in a

former report, it is impossible for them to do any scale inspection excepting those scales used in the sale and purchase of food and drug products. I am convinced that the time has come when the legislature should provide special inspectors for weights and measures in order that dealers may have some way of knowing when their weights and measures are correct, and that the consumer be thereby protected in his purchases. I will have somewhat more to say on this subject in my December report.

LABORATORY OF HYGIENE AND PUBLIC HEALTH.

The following letter was received from the chancellor of the University since the last annual meeting.

"June 27, 1910.

"MY DEAR DR. CRUMBINE—I have the honor to inform you that the board of regents of the University of Kansas, at its meeting June 24th, voted that in the reorganization of the school of medicine a department and laboratory of hygiene and public health be established, and that its services be offered to the state for the conduct of the state work in hygiene and public health. It was intended that this should be in coöperation with the State Board of Health and, we hope, with its counsel in regard to the scope of the work.

"With best wishes, I am very truly yours,

FRANK STRONG."

In addition to the letter, the dean of the medical school has outlined a tentative program for the establishment of a laboratory as indicated in the chancellor's letter. It is for the State Board of Health to say whether they favor such a program, or whether they desire to ask the legislature for an independent, well-equipped, up-to-date laboratory, to do the daily bacteriological work of the department.

One thing is certain, that our absolute needs have outgrown our equipment and help, and I am under necessity of constantly calling on the University for help in the bacteriological work, particularly concerning the water supplies and in special investigation. This work has been well done, but the reports of the work have been so long deferred, in a number of instances, as to be of no value to the department in actual suppression of disease.

Since writing the above I have received another letter from the chancellor, under date of September 12th, which is as follows:

"September 12, 1910.

"Dr. S. J. Crumbine, Secretary State Board of Health, Topeka, Kan.:

"MY DEAR DR. CRUMBINE—I am writing this letter, and I hope that you will bring it to the attention of the Board of Health at its meeting this week, in regard to the budget of the University so far as it relates to the work that we are doing for the State Board of Health. There has been some complaint, which is well founded, because different analyses and reports asked for by your Board were not received in such time as to make them efficient and usable. This has been due to the following facts: When the last budget of the University was made up for the legislature it contained the estimates of our people concerned in your work, as to what would be needed. These estimates were made, as I understand, after consultation as to the probable amount of the work. As is well understood by us all, the work carried on by the State Board of Health has been larger in volume and more important in every respect than any of us, I think, anticipated. At any rate in my mind it has developed a wonderful efficiency. This unlooked for increase in the amount of work not only took up all of the estimated budget for such purposes, but also

drew on the general fund of the University. We have therefore done the best we could under the circumstances.

"The next budget for the University will contain whatever is necessary to carry on the work we are doing for your honorable Board. The work so ably carried on by your secretary has now proceeded long enough, so that much more accurate estimates ought to be possible for the next legislature than for the preceding, so far as we are concerned. There has also been the difficulty, always to be found in any new work, of differentiating the two kinds of endeavor at the University. That has now largely been done, and the work for your honorable Board can proceed with less difficulty than before. We have given Professor Hoad an assistant, and on the application of your secretary, we shall now be able to add an assistant to the water analysis department. We also propose, hereafter, that the work in the bacteriological analysis and all other work shall go on during the summer as well as other times in the year.

"I take the liberty also of referring again to the matter of a health laboratory at the University. As you have doubtless noticed from the very exhaustive report by the Carnegie Foundation on medical schools, medical education in this country is in a transition period. The question is an exceedingly vital one, not only in Kansas, but elsewhere. Making all due allowances for the excellent work that has been done in the past by independent schools, the cost of medical education makes it inevitable that the future of our medical education must lie with the state universities. Our own University has already been pointed out by the Carnegie Foundation, in its most exhaustive report, as one of the thirty-odd points where great medical schools ought to be developed. But in order to do this the hearty and unselfish coöperation by all agencies having anything to do with such matters will be necessary to bring about the desired end. It is not necessary for me to point out to such a body as your honorable Board how vital this question is and what an immense advantage it would be to you in your great campaign for the public health to have a great center of medical education at your disposal. I therefore ask your sincere consideration and coöperation in connection with this health laboratory which will be so necessary and so advantageous in the development of a high medical education.

"Sincerely yours, FRANK STRONG, *Chancellor.*"

Whatever the legislature does, one thing is self-evident, that the state of Kansas must establish a laboratory of hygiene and public health next winter, at some place, and under some special authority, in order to care for the ever-increasing and absolutely necessary work of this kind in the interest of the public health.

Respectfully submitted,

S. J. CRUMBINE, M. D., *Secretary.*

MINUTES OF FIRST QUARTERLY MEETING.

HUTCHINSON, KAN., September 14 and 15, 1910.

The first quarterly meeting of the State Board of Health was held in the Commercial Club rooms at Hutchinson, Kan., on September 14 and 15, 1910, session beginning at 1:55 P. M., Pres. Clay E. Coburn in the chair. Upon roll call all the members of the Board were present, excepting Mr. Welch, the attorney, and all the members of the advisory board, excepting Professors Willard and Marvin and Doctors Magee and Greenfield. The minutes of the annual meeting were read and approved, and ordered placed on file. The secretary presented his report for the quarter, and upon motion the same was received and ordered placed on file, and a recess taken until 7:30 P. M.

During the interval of recess a majority of the members of the Board and advisory board present made an inspection of the polluted conditions of Cow creek, and saw with their own eyes that the order issued to the city of Hutchinson during the interval since the last annual meeting by the secretary and engineer and approved by the governor and attorney-general, was one that was necessary because of the intensely polluted condition of the waters of the creek.

The session reopened at eight o'clock P. M., with a discussion of the secretary's report. The recommendation that the government's letter suggesting sanitary conditions under which desiccated eggs should be produced was, after considerable discussion, adopted on motion of Doctor Huffman, seconded by Doctor Alexander.

The recommendation that Mr. N. T. Veatch be confirmed as assistant engineer of the State Board of Health was approved.

The revelation to the Board of the condition of Cow creek was warrant enough for their universal approval of the order given to the city of Hutchinson, which at this point was made upon motion of Doctor Aldrich, seconded by Doctor Huffman.

The letters from Chancellor Strong, concerning a laboratory of public health and hygiene, was discussed at some length, when, upon motion of Doctor Alexander, it was suggested that a committee of three be appointed to investigate the possible relations which should exist between the State Board of Health and the Kansas University in this matter. On motion of Doctor Milligan, the recommendation of the secretary that a lab-

oratory of the State Board of Health should be established at some place and under its authority was unanimously adopted.

The report of the special committee appointed to investigate the charges presented in a resolution of the Retail Grocers' Association, in regard to a certain inspector of the department, was presented, and on motion of Doctor Alexander the report was received and ordered placed on file. The report is as follows:

"To the State Board of Health:

"The committee appointed to examine into certain charges introduced by resolutions presented at the last meeting of the State Board of Health, beg to submit a report as follows:

"The committee, which consisted of Dr. Clay E. Coburn, president State Board of Health, Dr. R. S. Magee, pathologist, Wm. J. V. Deacon, statistician, met at the office of the secretary of the Board at the Capitol, Topeka, Kan., on June 28, at ten o'clock A. M., due notice having been given all interested parties of the time and place of the meeting. The committee was assisted by Mr. Charles D. Shukers, special assistant attorney-general, who examined the witnesses on behalf of the committee. The following witnesses were examined:

"Dr. T. R. Conklin, county health officer, Abilene; Dr. J. C. Montgomery, county health officer, Manhattan; Mr. W. H. Ruhl, county attorney, Abilene; Mr. W. H. Holt, merchant, of Manhattan; Mr. J. E. Brewer, merchant, of Abilene, who represented the parties who preferred the charges; Mr. A. E. Ice, food inspector; Dr. S. J. Crumbine, chief food and drug inspector; Mr. King, merchant, of Burlingame.

"The hearing occupied the entire day, and all witnesses who presented themselves were given an opportunity to testify. As a result, the committee is pleased to report as follows:

"Taking up the resolutions in order, the following are the conclusions that appear to be reasonable:

"First, (a) It was not shown that any grower of berries had been prosecuted for failure to label berry boxes.

"(b) That the arrest and prosecution of handlers of berries who make sales of unlabeled boxes is made mandatory upon the Board of Health by statute.

"Second, (a) That no evidence of trickery or deception was shown to have been knowingly or intentionally practiced by Inspector Ice in the cases cited, and that the charges were made as a result of a misunderstanding of the situation by the merchants who made the charges.

"(b) The charge that 'the cases were absolutely devoid of merit or common sense' is not borne out by the testimony.

"(c) 'The wishes of the consumer regarding the prosecution of such cases' should have very little weight with the Board in its effort to enforce the law.

"Third, The 'rules' referred to as 'being made by the Board and resulting in restraint of trade and without benefit to the consumer or merchant' are statutory enactments, and not 'rules' of the Board.

"Fourth, That evidence of 'grandstand playing for the purpose of advancing the political interests of certain persons at the expense of reputable merchants of the state' was entirely lacking, and the action of the Board has been entirely divorced from political questions, and in nowise influenced by them.

"Fifth, That the expression of the merchants of the state of their 'willingness to cooperate in every possible way in preventing fraud and deception to be practiced upon the consumer of food products' is appreciated, and the Board should continue as it has in the past, through its

inspectors and officers, to make itself valuable and helpful to the merchants as well as the consumers of food products.

"All of which is respectfully submitted.

CLAY E. COBURN, M. D., *President.*

R. S. MAGEE, M. D., *Pathologist.*

W. J. V. DEACON, *Statistician.*"

Assistant Chief Inspector Deacon made a report on hotel conditions throughout the state. This report received considerable discussion, whereupon it was directed that the attorney for the Board, Mr. Welch, be requested to cite the county health officers who had made no report for either 1909 or 1910 to appear before the Board at the next quarterly meeting and show cause why they should not be removed from office, in accordance with the law; and further, that all county health officers from whom reports have not been received by December 1, covering the 1910 inspections, be likewise cited.

Resolution 8 of the hotel inspection law was then changed in accordance with the suggestions of the assistant chief inspector. The amended resolution reads as follows:

"Regulation 8. Fire Extinguishers.

"Each and every hotel, regardless of size, shall be provided with at least one efficient chemical fire extinguisher, of approved pattern, to every 1500 square feet or less of floor area on each floor. The only type of chemical fire extinguisher approved by the State Board of Health is the carbonic acid gas hand fire extinguisher, which bears the label of approval of the Underwriters' Laboratories, Incorporated. Neither chemical extinguishers of the breaking-bottle type, dry powder or hand grenades will be approved. Such extinguishers shall be placed in convenient permanent locations in the public hallways outside of the sleeping rooms and within easy reach, and shall be charged at intervals of not more than six months. Extinguishers shall be provided with a tag, which tag shall bear the date on which the extinguisher was last charged, written in ink, and by whom charged. Hotels equipped with standpipe and hose, of not less than two inches in diameter, attached to a wet pipe, as provided by the law, are not required to have chemical extinguishers."

The report of the special committee on food and drug standards was then unanimously adopted, changing regulation 7 to conform with the action of the Board at its annual meeting, in abolishing the provisions for guaranty serial numbers, under the food and drugs law. The amended resolution reads as follows:

"Regulation 7. Form of Guaranty.

"SEC. 9. (a) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold, offered or kept for sale under a written guaranty by the wholesaler, manufacturer, jobber, dealer or other party residing in the United States from whom purchased; provided, that this exemption shall not apply when such dealer knew or ought to have known that said drugs or foods so sold, offered or kept for sale were adulterated or misbranded, within the meaning of the act, and the publication in the official publication of the

State Board of Health, the BULLETIN of the Kansas State Board of Health, of such drugs, liquors or foods as are adulterated or misbranded, within the meaning of the act, shall be deemed sufficient notice to dealers in the state of Kansas that such products are adulterated or misbranded.

"(b) A guarantee may be given on each bill of sale, invoice, bill of lading, or other schedule giving the name or names and quantities of the article or articles sold, by the manufacturer or dealer to the purchaser, or the manufacturer or dealer may issue a general guarantee for any or all of the foods or drugs sold by him, giving the names and quantities of the articles sold. In the event of a general guarantee being given a duplicate of guarantee shall be filed with the secretary of the State Board of Health.

"(c) The following form of guaranty is suggested:

"I (we), the undersigned, do hereby guarantee that the articles of food (or drugs) manufactured, packed, distributed or sold by me (us), (specifying the same as fully as possible), are not adulterated or misbranded, within the meaning of the Kansas food and drugs law of February 14, 1907. (Sign in ink)

"(Name and place of business of wholesaler, dealer, manufacturer, jobber, or other party.)"

The committee reported a standard for diluted fruit juices, such as lemonade and orangeade, also standards for imitation products under a like name. These standards are as follows:

F. BEVERAGES.

(6th under section a. Fruit Juices.)

6. *Diluted fruit juices.* A diluted fruit juice, such as lemonade and orangeade, is the expressed juice of the fruit corresponding to the name, together with potable water and cane sugar, without the addition of any added coloring matter or flavor.

7. *Imitation diluted fruit juices.* An imitation diluted fruit juice is an uncolored solution consisting of potable water, cane sugar and of flavor, and acidulous ingredients corresponding to the fruit imitated.

Doctor Alexander presented a report covering the inspection of the Orphans' Home at Atchison, which is as follows:

"To the State Board of Health:

"Your committee appointed for that purpose visited the State Orphans' Home at Atchison on July 19th, and beg leave to report as follows:

"The Home is situated on the high hills just outside of the city, on a site commanding a view of the Missouri river and its valley for many miles. With beautiful surroundings, a natural drainage well nigh perfect, a soil which, though not particularly well adapted to agriculture, serves unusually well as a foundation for a playground, it is apparently an ideal spot for an institution of this kind. The water supply is abundant and of good quality; the sewer disposal plant is satisfactory. The grounds, though not elaborately laid out, are well kept. The buildings are well cared for, clean and orderly, and the general sanitary condition as good as possible under existing circumstances; for, though nature has done much, the state a great deal, and the management what it could, nevertheless there are some things which are not what they ought to be, and therefore your committee desires to offer some criticism, coupled with some suggestions, in the hope that both may redound to the benefit of the institution.

"In the first place the main building is old. But because it is still an excellent building, that fact would not be interesting in this connection were it not that it explains another matter, namely, that it is equipped

with antiquated, unsatisfactory, and distinctly unsanitary plumbing. This is a condition that ought to be remedied as soon as possible. Tinkering will not do. The whole system should be renewed. The superintendent has asked the legislature once before for an appropriation for this purpose. He will ask it again, and we believe that the State Board of Health can do no less than use its influence for the furtherance of this worthy demand. In this connection it may be mentioned that the basement floors in this building are mostly in bad condition. They were originally made of cement blocks. No doubt in the beginning they were smoothly laid, but time and use has done much to disarrange them. Some are depressed, others elevated, so that the floors have become quite uneven, with wide cracks between the blocks into which the scrub water sinks. This is important, and because the several divisions of the basement are much used as play rooms and for bathing, these blocks ought to be removed and solid cement laid instead.

"The dormitories in this building are clean and well ventilated, but the beds leave something to be desired. This does not refer to sheets and pillow cases nor to the bed covering, but to mattresses and bedsteads, more especially the latter. These have a much-battered appearance, having lost a good part of the enamel, and most certainly ought to be replaced by new ones. The kitchen furniture also needs attention. The tables especially deserve condemnation. The refrigerator is old and ought to be discarded. There is urgent need of a modern refrigerating room. This would be profitable financially, as well as from the standpoint of the health of the inmates.

"The fire escapes appear to your committee to be inadequate. There is but one on the main building, and it is so located that access to it might be easily cut off. On the other buildings there are none at all. This lack is particularly noticeable in the school and assembly rooms. True, the building is but two stories high, but the stairways are narrow with a short turn in the middle, where a stumbling child might, in case of panic, precipitate an appalling disaster. To add to the danger, the doors at the bottom all open inward. This last might easily be corrected, and surely a fire escape ought to be provided.

"On the farm are kept a number of cows—enough to keep the institution in milk. The milking barn is apparently as well kept as circumstances will permit, but it is an old-fashioned affair. Many years ago some attempt at modernization was made in the laying of a brick floor down the center of the building just back of the stalls, but the stalls themselves were provided with wooden floors only. As has been intimated these are kept fairly clean, but the sanitary condition is far from satisfactory. It is a matter of grave importance, a potential evil that ought to be corrected as soon as possible. No measure short of the most radical can do this. The building ought to be torn down, and a new and modern sanitary milking barn erected in its place. The management of the institution is fully alive to the situation and of its need of correction, and is seeking an appropriation for that purpose. We believe that the movement to place this institution on advanced ground in this respect should receive the official indorsement of this Board and the active encouragement of every member of it, to the end that the next legislature, if it must economize, will not do so at the expense of the unfortunate children who, through no fault of their own, have become the wards of the state.

B. J. ALEXANDER,
CLAY E. COBURN,
Committee."

A brief report was made by the committee on the inspection of the Hutchinson Reformatory, whereupon the committee was continued and requested to report at the next quarterly meeting, after a more extended investigation should have been

made. The secretary was requested to write the superintendent of the Reformatory relative to the condition of the cold-storage and refrigerating plant, and advise him that a later inspection would be made.

Doctor Milligan then made a report on the inspection of the State Hospital at Osawatomie, which report is as follows:

"To The State Board of Health:

"GENTLEMEN—Your committee to investigate the sanitary condition of the Osawatomie State Hospital, make the following report: The committee went to Osawatomie the evening of August 30th, and on the following day through the courtesy of the superintendent and his assistants were shown through the buildings and over the grounds of the Hospital. The investigation included an inspection of the water supply, the sanitary conditions of the kitchens and toilet rooms, screening against flies, ventilation, and overcrowding of patients in the bedrooms.

"WATER SUPPLY.

"The water supply is abundant, but the quality of the water is not all that it should be, as the main source of the supply is from the Marais des Cygnes river and this water is muddy most of the time. The settling basin is about 3000 feet from the river, but is not properly provided with partition walls, it being all in one basin. The basin is ample in size and the water is brought to it through a 10-inch pipe of cast iron. The pump at the river is driven by electricity, furnished by the plant at the Hospital. This water is used for the laundry and also for bathing. There is a large spring about 200 yards from the river which affords sufficient water for culinary purposes. This spring water is also pumped by electricity but through a separate 6-inch cast-iron pipe. The pump that is connected to this spring is also connected to a well near the river in which the water is always clear, and this water can be delivered with the spring water or separately, it being pumped into a large cistern near the Hospital and also into tanks in the attic where it is distributed through the buildings. This water should be protected from contamination during flood periods in the river.

"There is also a well not far from the main buildings, which furnishes the supply of drinking water; this water is carried from the well in buckets and placed in small tanks in each ward of the building. The committee would recommend that the settling basin should be partitioned and cemented, so that the water could be pumped into one section from the river and stand there until clear, when it should be pumped to the filter before being distributed to the buildings. The filter in use there at the present time is inadequate. It should be rebuilt, with double the capacity. The committee thinks that it would be much better to have the entire supply of water obtained from one source, so that this water could be used for all purposes.

"SANITARY CONDITIONS.

"The ventilation of the institution is good. The committee was surprised to find that what is commonly known as 'hospital odor' is practically eliminated. A system of soil-pipe ventilation, with a down draft from all toilet rooms together with good wall ventilation, leaves little to be desired in this respect, and speaks well for the management of this institution. There should be some improvements made in the toilet rooms in replacing some of the old, worn-out material now in use. The kitchens were clean and well kept, but are in need of new and better furnishings in the way of sanitary serving tables and sinks which we hope that the next legislature will provide for.

"SCREENING AGAINST FLIES.

"This is one of the chief annoyances among hospitals, the common house fly. And although the screening at the State Hospital so far has been confined to the kitchen and dining rooms, and some of the lower rooms of the buildings, we noticed very few flies in the wards that were unscreened. This we attribute to the cleanliness of the buildings and premises, as there was no garbage or refuse material about the buildings or grounds. The committee would, however, recommend that all windows and outer doors be screened.

"OVERCROWDING OF PATIENTS.

"This institution is overcrowded with patients. The committee noticed one room twelve by twenty-eight feet, with four windows in the outer wall and one door and transom in the inner wall, in which there were eight beds in which each night eight patients slept. This would not be tolerated in any hotel in this state, and it should not be tolerated in any institution belonging to the great state of Kansas. This is not the fault of the management of this institution, but is due to the fact that there are more patients in the institution now than can properly be accommodated, and the only way to relieve these three hospitals, as they were all in the same condition, is to erect a new institution. And this institution should be located somewhere in the west central part of the state where a sufficient supply of pure water and a large body of land adapted to cultivation could be obtained by the state and where the railroad facilities would be convenient for the institution.

"Considering the large number of patients and the overcrowded conditions at the Osawatimie State Hospital, and the length of time the institution has been in operation, the committee feel that they should commend the management of the institution for its excellent condition. The condition shows that the superintendent and his assistants have but one object in view, and that is the welfare of the patients.

J. A. MILLIGAN,
S. J. CRUMBINE,
Committee."

Doctor Aldrich presented reports of inspection of the State Normal School at Emporia, and the State Hospital at Parsons, which are herewith presented:

"To the State Board of Health:

"GENTLEMEN—Your committee appointed to investigate the sanitary condition of the State Normal School at Emporia, which committee consisted of H. L. Aldrich, M. D., J. D. Milligan, M. D., and W. J. V. Deacon, statistician, met in the city of Emporia on Monday, June 27th, and made a careful examination of the aforesaid institution, and in accordance beg to report the following:

"The president, Mr. J. H. Hill, was out of the city at the time and the committee was accompanied by the vice president, Mr. Glotfelter, and the committee desires to express its appreciation of the courtesy shown them during the visit.

"The two toilets on the main floor of the old building have no outside ventilation and their further use should be prohibited, unless a proper ventilating system is installed. The wash bowls throughout this building were of the old-fashioned two-piece variety, and in many cases the bowls were loose, permitting an accumulation of dirt in the joint and permitting the drip to keep the floor in a wet and unsanitary condition.

"The large toilet room provided for the use of women in the basement of the old building does not appear to have sufficient ventilation, and this should be increased by the addition of at least one or more exhaust pipes and the exhaust pipe should be fitted with an exhaust fan.

"The above is also true of the men's toilet. Some form of automatic disinfection for the urinals in the men's toilet should be provided and greater care should be taken by the janitors in keeping these places thoroughly clean. It should always be maintained with a strict regard for the public health. The committee also recommended the removal of the old two-piece bowls now in use, and that they be replaced with the one-piece enamel or porcelain bowl; and further than that, in all cases where the space below the bowl is housed up with boards, these should be removed and the basin set on brackets or pipe supports as indicated by modern sanitary practice.

"In the library building great care should be taken to insure proper ventilation of the toilets from the outside, by arranging the windows so that they can not be entirely closed. The toilets in this building are in fair shape.

"In the chemical laboratory the apparatus provided for carrying off the fumes is inadequate to the work required of it and should be arranged to insure the prompt clearing of the rooms of such fumes as may be raised during the experiments, which fumes may be dangerous as well as offensive.

"The new gymnasium building seems to be well arranged and in good sanitary condition. The committee understands that physical work is required of all of the students during certain portions of the course, but is not advised whether or not physical examination is made to ascertain the condition of the heart or the possible existence of hernia before the students are assigned to the classes, but assume, of course, that this practice, which is a well recognized necessity, is followed. If this is not the case we would by all means recommend that it be done.

"The swimming pool is certainly commendable, but the committee failed to observe any signs requiring the students to use the showers before going into the pool. We assume that of course this practice, to prevent possible infection, is strictly adhered to.

"The condition of the toilets in the model school buildings is only fair. These might be improved by more rigid requirements from the janitor service. The installation of five sanitary drinking fountains, which are in various places about the building, is to be commended, and the committee would respectfully urge that the number of them be increased until there are sufficient to supply the whole school.

"The committee notes with satisfaction the installation of the hospital or infirmary, for the use of the students, which occupies a slightly position on the campus, is furnished with several couches and two hospital beds, and in charge of a graduate nurse.

"The committee were told that minor ailments were treated in the infirmary, but if the condition of the patient was such as to necessitate medical aid, such students were required to consult a physician or a physician was called to attend them.

"In this connection the committee desires to say that while this effort to care for the health of the student body is commendable, it might be greatly broadened to the advantage of the public health of the state. A committee of the faculty should be appointed, known as a public health committee; this committee should have a physician at its head, and if there is not a physician available on the faculty one should be secured from the city, preference being given to one who has specialized on sanitation and public health problems. Said committee should have complete charge of the sanitation of the buildings of the college, of the hospital or infirmary and of the physical condition of the students in their relation to physical training and athletics. Further, all boarding and rooming houses desiring to furnish board or lodging to the students should be required to register with the college authorities and the public health committee should then make a sanitary survey of the premises, particular attention being given to the water supply, toilets, ventilation of rooms and all other conditions which make for hygienic surroundings,

and also inquiry should be directed as to the sociological environment. Unless this survey meets the approval of the said committee or can be made so, students should not be allowed to patronize them.

"The committee regards this matter from a point aside from the local situation; these students are brought from all parts of the state and their physical well-being is not only of interest to themselves and the college authorities, but also to their families in every part of the state, and their training as teachers should include not only theoretical hygiene but a thorough practical training in the principles and practice of personal and public hygiene in their own immediate surroundings while attending the college.

"A copy of this report has been furnished the Normal School authorities for their information.

"All of which is respectfully submitted for your consideration.

H. L. ALDRICH, M. D., *Chairman.*

J. A. MILLIGAN, M. D.

W. J. V. DEACON, *Statistician.*"

"To the Kansas State Board of Health:

"GENTLEMEN—We the undersigned members of the committee appointed by President Coburn to inspect the State Hospital at Parsons, Kan., visited that institution on August 4, 1910.

"Doctor Perry, the superintendent, personally conducted us through each of the twelve buildings. We are under obligations to the doctor for the courtesy with which he treated us and take this occasion to express our thanks.

"The location of the hospital is ideal. It is on high ground about two miles northwest from the business part of the city. It fronts southeast and is approached from the city through a driveway on either side of which are growing trees.

"Facing southwest are four cottages which are used for female patients. Each of these cottages was carefully examined. The kitchens, dining rooms, baths and closets are in excellent condition.

"Building No. 1, south, is used as a ward for female patients who need to be kept under restraint. There are over one hundred inmates cared for in this ward. The kitchen is a small, low room and poorly ventilated. Superintendent Perry has asked for a kitchen with a stack to carry off the steam and odors, and this we would recommend as there should be better accommodations where food is prepared for so many people. The dining room should have a tile floor. The bath rooms and closets are in excellent condition.

"Building No. 2, north, corresponds to No. 1, south, and is used as a ward for males requiring restraint. The same condition exists here in kitchen and dining room as that found in No. 1, south, and we recommend a new kitchen and tiling for the dining-room floor.

"Between buildings No. 1 and No. 2 is a new unoccupied structure which is being properly equipped as regards up-to-date sanitary measures.

"Opposite the four cottages occupied by females are four similar cottages for males. Here we found the kitchen, dining room, baths and closets in each one satisfactory in every way.

"The main building, in which the general office is located, is in splendid sanitary condition.

"All sewage from the institution is discharged into the city sewers, and after being treated in a septic tank is discharged into Labette creek below the city.

"The water supply from the Neosho river is brought through the city mains. A good-sized standpipe is on the grounds and a generous supply of water is stored up for fire protection. A pumping station is maintained here for emergencies.

Respectfully submitted.

H. L. ALDRICH, M. D., *Chairman.*

J. B. CARVER, M. D."

Doctor Huffman reported on the inspection made at the State University, which is as follows:

"To the State Board of Health:

"GENTLEMEN—We, your committee to inspect the sanitary condition of the grounds and buildings of the State University at Lawrence, submit the following report:

"First, inspection made July 14, 1910. Campus and University grounds in excellent condition. Owing to the formation of grounds the drainage is good, and nothing was found that could be considered a menace, or dangerous to public health.

"Second, *Water Supply*. The water supply is good and the quality of water is above reproach.

"Third, *Buildings*. All the new and recently constructed buildings were found to be in excellent sanitary condition, as to light, cleanliness and ventilation, but some of the older buildings were found to be deficient in light and ventilation; and owing to plans on which they were constructed, it is hard to keep them clean. In several of the buildings the supply of light is not sufficient; especially is this true of the basement of the chemistry building, where the light comes in from small windows placed high up on the wall. This could be overcome by a wide excavation around the building forming an area way permitting large windows to be made extending the entire height of the room. In several buildings the ventilation is not sufficient; one is the auditorium in Fraser Hall, which has only two ventilators on upper floor level, and two on lower. Forced ventilation should be provided in this instance. What was said above will apply equally to the library and law buildings. Complaint was made to the committee that the heat supply was not sufficient in extreme cold weather, but when the superintendent of the grounds was interviewed relative to the heat supply, he took issue with the one who made the complaint and said the supply of heat was all that was needed. Conditions as to cleanliness excellent, only found a few boxes and other kinds of rubbish that should have been disposed of. In the chemistry building, found a leak in the hydrogen sulphide gas generator, which caused an unpleasant odor throughout the building. This should be corrected at once by installing the generator outside of the building.

"Fourth, *Sewerage*. That part of the sewerage which is connected with the city of Lawrence is all that could be desired, and have no criticism to offer; but we found that the medic hall and physics building was not connected with the city system, that the disposal and waste from these two buildings was carried off to the south and run out on the open ground. We were informed that the amount of sewerage from these two buildings was small, but even if this is true such a condition should not be permitted.

"In conclusion we wish to commend the establishment of a committee on public health, to investigate all boarding places of students, as to sanitary surroundings and water supply, and would recommend that other educational institutions of the state adopt the same policy for the prevention of disease among students.

"To recapitulate, would make the following recommendations: That a better system for light and ventilation be provided in the older buildings and that steps be taken at once to overcome the defect in the sewerage system. Respectfully,

CHAS. S. HUFFMAN, M. D., *Chairman*.
S. J. CRUMBINE, M. D."

On motion all these reports were received and, after considerable discussion, the secretary was directed to send copies of the same to the heads of the respective institutions, to the Board of Control, and to the governor. This was done with a view of informing them of the conditions found in the in-

stitutions, from the standpoint of sanitation, and of securing their correction as far as possible. Upon further discussion, it was decided that the scope of this work of sanitary inspection of public institutions be so broadened as to include all educational institutions of a public nature, such as colleges and academies not belonging distinctively to the public school system.

Upon motion the Board took a recess until 8:30 o'clock on Thursday morning.

SEPTEMBER 15th, 8:30 A. M.

Board met in the Commercial Club rooms, with all the members of the Board present excepting Mr. Welch.

Professor Bailey made quite an extended report of the meeting of the American Public Health Association, which met in Milwaukee, September 5th, which is as follows:

"To the Kansas State Board of Health:

"GENTLEMEN—I had an opportunity to represent the state of Kansas at a recent meeting of the American Public Health Association and want to take advantage of this to speak briefly of some of the things that are occupying the attention of boards of health and sanitary officials in the United States, Canada, Mexico and Cuba.

"The attendance at the association was large and the papers read were of great interest. The papers were read in a general meeting and also in three sections—the laboratory section, section on vital statistics, and the section of municipal health officers. Of course, in so large a meeting it is impossible to hear all the papers, but the following are a few that interest this board especially.

"First, those on disinfectants. Authors are not fully agreed as to the best methods of testing the value of disinfectants, but they do agree quite uniformly to use the typhoid bacillus as a check in comparing commercial disinfectants. The reports of the committee on standardizing disinfectants were read and discussed. It was recommended that commercial disinfectants be analyzed under the supervision of state boards of health, and that all disinfectants should have their composition and disinfecting value stated upon the label. In this same section a paper was read on the use of carbo-gasoline for the disinfection of books. This is found to be very efficient, much better than formaldehyde gas. An 88° Bäumé gasoline with two per cent phenol is used. It is efficient in ten minutes but may be allowed to act for one-half an hour.

"Another series of papers upon the purification of waters by the hypochlorite was of great importance. In testing the methods used the colon bacillus is used as an index. Calcium hypo-chlorite (bleaching powder) is recommended, although, if it could be produced at the same price sodium hypo-chlorite has some advantages. The calcium hypo-chlorite is a by-product in the manufacture of caustic soda by the electrolytic process, consequently it is very cheap.

"In this same connection it was recommended that an emergency plant which would purify a million gallons of water in twenty-four hours be constructed and kept by the board of health to send out to any cities where the water was dangerously infected. From 0.13 to 0.5 parts of available chlorine per million gallons is used. A plant of this character is at present in use in Milwaukee. (Describes system.) The use of hypochlorite seems to replace all other methods of purifying infected waters at the present time.

"The committee on methods of analysis of public water supplies made a report of progress. This is of great value and will ultimately lead to the unification of methods. A very strong series of resolutions was passed in regard to the control of venereal diseases, and resolutions were made urging the education of children in the schools.

"An interesting series of moving pictures showing the work of a fly was shown. It is recommended that the different state boards of health either purchase or rent these pictures and try to get them put on at the nickel theaters. A similar set of moving pictures illustrating the story of infected milk was also shown. These would be very effective and the impression produced upon the people would not soon be lost. It is possible that some such exhibit of this kind might be made in connection with the tuberculosis work.

"Mr. Rudolph Herring has perfected a very efficient garbage incinerator, which has a capacity of three hundred tons per day. This is in use at Milwaukee and handles a large proportion of the garbage, ashes and sweepings of the city. No fuel is used, and with the plant running at its full capacity a large amount of extra steam is available for producing electricity or pumping water.

"The association listened to a speech by Colonel Roosevelt in which he showed his appreciation of the work of the public health association. Mayor Sidel also read a paper upon social economics and public health and welcomed the association to the city. A splendid paper on co-operation between the state board of health and the state university was also read.

"There were many other lines of investigation reported, such as quarantine regulations, regulation of child labor, examination of pathogenic material, registration of vital statistics, etc.

"The next meeting of the association is to be held in Havana, Cuba, with Dr. Simpson of Winnipeg as president.

"Dr. Strong, Chancellor of the University, will give us a new man, full time, for water analysis, Mr. Brookmiller. E. H. S. BAILEY."

This was followed by his report on water analysis, whereupon he submitted the following rule for adoption, regulating the matter of water samples sent in for analysis. Upon motion the rule was unanimously adopted, and reads as follows:

"LABORATORY RULE.

"University of Kansas, Water Survey Laboratory. Confirmed by the State Board of Health, September 15, 1910.

"The water survey laboratory of the Board of Health can not make analysis of samples of water unless the parties desiring these analyses inform us beforehand, and give us a chance to send them suitable containers in which to ship the water and directions for collection. Expense of transportation in both directions must be paid by the parties desiring the analysis, and complete information as to the source and surroundings of the supply must be given to the laboratory."

Professor Wm. C. Hoad, the engineer, then made a report of the work, during the last quarter, under the water and sewage division. The question of stream pollution by industrial wastes was thoroughly discussed, and the recommendations of the engineer were adopted by unanimous vote of the Board in which it was ordered that the creamery companies at Tonganoxie be required to purify the milk or industrial wastes from

their factories before being turned into the waters of the state, and that the city of Tonganoxie be ordered to discontinue the use of the creek running through that city as a place for a city dump. The Board also unanimously ordered that the oil refinery and rubber and cement plants at Independence, who were polluting the waters of the state by discharging industrial wastes into said waters, shall cease from so polluting the natural waters of the state, and that the city of Independence be required to purify their sewage, after a reasonable time of such notice. The secretary and engineer were requested to see that these orders were given and made effective.

The secretary then reported to the Board that the city of El Dorado had refused, or neglected, to comply with the order of the Board made April 21, 1909, requiring said city to purify its sewage on or before November 7, 1909. It was unanimously voted that the attorney-general be invited to enforce the provisions of the water and sewage law against the city of El Dorado.

The president then appointed the following committee to confer with the chancellor in regard to the proposed laboratory of hygiene: Drs. Alexander, Huffman and Lerrigo.

The following bills were audited and allowed:

Dr. C. H. Lerrigo	\$23 74
Dr. B. J. Alexander	26 70
Dr. Clay E. Coburn	26 05
Dr. V. C. Eddy	39 50
Dr. J. B. Carver	29 99
Dr. C. S. Huffman	29 95
Dr. J. A. Milligan	23 44
Dr. H. L. Aldrich	33 36
Dr. W. O. Thompson	20 80
Dr. S. J. Crumbine	14 91
Prof. Wm. C. Hoad	16 32
Prof. E. H. S. Bailey	14 87
Prof. L. E. Sayre	13 30
Mr. W. J. V. Deacon.....	11 29

No further business appearing, upon motion the Board adjourned.

1909

DEATHS.

870	Pneumonia
841	Consumption
401	Typhoid Fever
214	Cholera Infantum
201	Diphtheria
79	Dysentery
66	Scarlet Fever
47	Measles
1	Smallpox

1910

1037	Pneumonia
865	Consumption
388	Typhoid Fever
316	Cholera Infantum
186	Diphtheria
114	Dysentery
112	Scarlet Fever
111	Measles
14	Smallpox

ANNUAL REPORT FOR STATE, 1909.

TOPEKA, KAN., December 31, 1909.

To the Secretary of the State Board of Health:

The following diseases dangerous to the public health have occurred during the past year:

	Diphtheria....	Scarlet fever..	Smallpox.....	Measles.....	Typhoid fever..	Chicken pox..	Cholera infantum....	Dysentery	Consumption..
Number of cases.....	1,471	1,343	1,779	2,517	1,399	445	212	195	909
Number of deaths.....	201	66	.....	47	392	.....	185	60	761

Total number of deaths from all causes during the year, 13,485; assessor's report, 8207.

Total number of births during the year, 21,926; assessor's report, 26,554.

Total number of marriages during the year, 14,670; assessor's report, 9529.

Number of nuisances abated during the year, 2716.

Inspections made of slaughterhouses and meat markets, 467.

Salary of health officers, \$22,650.

Money spent by Board during 1909, \$34,627.13.

DEATHS—NUMBER AND CAUSES THEREOF.

1.—General Diseases, 3039.			
Abscess.....	35	Rheumatism—chronic, and gout.....	33
Actinomycosis, trichinosis, etc.....	2	Scarlet fever.....	54
Addison's disease.....	2	Scorbutus.....	2
Alcoholism, acute and common.....	17	Scrofula.....	3
Anæmia, chlorosis.....	35	Smallpox.....	1
Cancer, and other mal. tumors: Of the		Syphilis.....	10
buccal cavity, the stomach and liver,		Tuberculosis of the larynx, lungs, men-	
the peritoneum, intestines, or rec-		inges and abdomen.....	841
tum, the female genital organs, the		Typhoid fever.....	401
breast, the skin, other organs and	501	White swelling.....	5
organs not specified, other tumors		Whooping cough.....	94
(tumors of the female genitals ex-			
cepted).....		2.—Diseases of the Nervous System and	
Cholera infantum ..	214	Organs of Special Sense. 1262.	
Croup.....	45	Cerebral softening.....	57
Diabetes.....	116	Chorea.....	8
Dysentery.....	79	Other nervous diseases.....	41
Diphtheria..	182	Congestion and hemorrhage of the brain,	257
Erysipelas.....	24	Convulsions (not puerperal)	20
Exophthalmic goiter	9	Convulsions of infants.....	67
Influenza (la grippe).....	99	Diseases of the ear and its adnexa	2
Intermittent fever and malarial cachexia,	32	Encephalitis.....	3
Lead poisoning.....	2	Epilepsy.....	27
Other chronic poisonings.....	7	General paralysis.....	184
Other professional intoxications.....	5	Other forms of insanity.....	29
Leukæmia.....	6	Meningitis—	
Measles.....	33	Meningitis, simple.....	73
Membranous croup.....	39	Cerebro-spinal meningitis.....	63
Mumps.....	2	Cerebral.....	17
Purulent infection and septicæmia.....	69	Spinal	45
Rabies.....	1	Paralysis without specific cause.....	302
Recurrent fever.....	1	Progressive locomotor ataxia.....	14
Rheumatism—acute, articular.....	38	Other diseases of the spinal cord.....	20
		Tetanus	33

DEATHS—NUMBER AND CAUSES THEREOF—CONTINUED.

3.—Diseases of the Circulatory Apparatus, 1089.		Puerperal septicemia.....		77
Affections of the arteries, aneurism, etc.....		54	Puerperal albuminuria and convulsions..	21
Affections of the veins, varices, hemorrhoids, phlebitis.....		4	Phlegmasia alba dolens.....	1
Affections of the lymphatic system, lymphangitis, etc.....		5	Other accidents of pregnancy, sudden death.....	2
Angina pectoris.....		22	8.—Diseases of the Skin and Cellular Tissue, 30.	
Embolus and thrombosis.....		21	Furuncle (carbuncle).....	
Endocarditis.....		44	Gangrene.....	
Hemorrhages.....		62	Phlegmon, warm abscess.....	
Other diseases of the circulatory system, Organic heart diseases.....		69	Other diseases of the skin and its adnexa (cancer excepted).....	
		808		
4.—Diseases of the Respiratory System, 1207.			9.—Diseases of the Organs of Locomotion, 13.	
Acute bronchitis.....		56	Affections of the bones.....	
Affections of the larynx.....		14	Anthraxis and other diseases of the joints (tubercle and rheumatism excepted),	
Asthma.....		38	Amputation (for unspecified disease)....	
Broncho-pneumonia.....		127		
Chronic bronchitis.....		28	10.—Malformations, 14.	
Congestion of the lungs (including pulmonary apoplexy).....		28	Malformations (congenital).....	
Diseases of the nasal fossae.....		1		
Gangrene of the lung.....		3	11.—Early Infancy, 596.	
Pleurisy.....		14	Congenital debility, jaundice and sclerema (premature birth).....	
Pneumonia.....		870	Lack of care, malnutrition, etc.....	
Pulmonary emphysema.....		7	Other diseases of infancy.....	
Other diseases of the respiratory apparatus (phthisis excepted).....		21		
5.—Diseases of Digestive Apparatus, 1115.			12.—Old Age, 815.	
Affections of the mouth and its adnexa..		4	Senile debility.....	
Affections of the pharynx.....		5		
Affections of the esophagus.....		2	13.—Affections Produced by External Causes, 909.	
Affections of the spleen.....		5	Absorption of deleterious gases (suicide excepted).....	
Appendicitis and abscess of the iliac fossae.....		98	Other acute poisonings.....	
Biliary calculi.....		29	Accidental drowning.....	
Other affections of the liver.....		60	Burning—	
Cirrhosis of the liver.....		41	Fire (burn).....	
Diarrhea and enteritis (under five years),		230	Hot liquid (scald).....	
Diarrhea and enteritis (over five years) ..		90	Burning by corrosive substances.....	
Hernia and intestinal obstructions.....		76	Electrical disturbances.....	
Other affections of the intestines.....		68	Fractures—	
Hydatid tumor of the liver.....		1	Of the skull.....	
Icterus gravis.....		8	Of the femur.....	
Intestinal parasites.....		8	Of the vertebrae.....	
Peritonitis (not puerperal).....		164	Other fractures.....	
Other affections of the digestive apparatus (cancer and tubercle excepted),		24	Freezing.....	
Ulcer of the stomach.....		51	Inanition.....	
Other affections of the stomach (cancer excepted).....		166	Other accidental injuries—	
6.—Diseases of the Genito-urinary Apparatus and its Adnexa, 692.			Dystocia (child).....	
Acute nephritis.....		160	Electric shock.....	
Bright's disease.....		362	Falls.....	
Other diseases of the kidneys and their adnexa.....		85	Gunshot.....	
Calculi of the urinary tract.....		9	Mining accidents.....	
Cysts and other tumors of the ovary.....		8	Railroad accidents and injuries.....	
Other diseases of the female genital organs.....		8	Vehicles and horses.....	
Diseases of the bladder.....		40	Other external violence—	
Diseases of the urethra (urinary abscess, etc.).....		2	Homicide.....	
Diseases of the prostate.....		8	Other accidents.....	
Diseases of the breast (not puerperal, not cancerous).....		1	Suicide by poison.....	
Metritis.....		1	Suicide by asphyxia.....	
Uterine hemorrhage (not puerperal).....		2	Suicide by hanging or strangulation.....	
Uterine tumor (not cancer).....		6	Suicide by drowning.....	
Other diseases of the uterus.....		5	Suicide by firearms.....	
7.—The Puerperal State, 145.			Suicide by cutting instruments.....	
Accidents of pregnancy.....		21	Suicide by other methods.....	
Puerperal hemorrhage.....		18	Sunstroke (insolation).....	
Other accidents of labor.....		10		
			14.—Ill-defined Diseases, 2559.	
			Dropsy.....	
			Sudden death (not puerperal).....	
			Unspecified or ill-defined causes.....	
			Total.....	

DEATHS—NUMBER AND CAUSES THEREOF—CONCLUDED.

AGES OF THE DECEASED.			
Under 1 year	1,917	Engravers and artists	1
Between 1 and 2 years	446	Farmers	1,586
Between 2 and 5 years	441	Firemen	7
Between 5 and 10 years	352	Housewives	2,203
Between 10 and 15 years	284	Insurance agents	13
Between 15 and 20 years	366	Jewelers and watchmakers	11
Between 20 and 30 years	980	Laborers	631
Between 30 and 40 years	875	Laundry employees	10
Between 40 and 50 years	794	Linemen	5
Between 50 and 60 years	1,045	Machinists	57
Between 60 and 70 years	1,526	Merchants	144
Between 70 and 80 years	1,744	Miners	81
Between 80 and 90 years	859	Ministers	21
Between 90 and 100 years	109	Molders	3
Between 100 and 110 years	8	Musicians	8
Above 110 years		Nurses	6
Unknown ages	1,739	Oil- and gas-well workers	4
Totals	13,485	Painters	20
		Paper-hangers	1
OCCUPATIONS OF THE DECEASED.		Planing-mill workers	6
Attorneys	23	Physicians	38
Bakers	7	Policemen	4
Bankers	16	Printers and pressmen	11
Blacksmiths	29	Real-estate agents	21
Barbers	13	Salesmen	36
Bookbinders	3	Steam-railway employees (office)	14
Bookkeepers	16	Steam-railway employees (operating department)	102
Bricklayers	6	Stockmen	23
Butchers	16	Street-railway employees	12
Contractors	17	Shoemakers	9
Carpenters	103	Stenographers	7
Cooks	28	Stone- and marble-cutters	29
Cigar-makers	8	Students	289
Clerks	70	Servants	84
Drivers	31	Tailors	18
Dressmakers	11	Tinners	4
Editors and writers	12	Teachers	27
Electrical workers	12	Undertakers	3
Engineers	28	Not specified	7,487
		Total	13,485

ANNUAL REPORT FOR STATE, 1910.

TOPEKA, KAN., December 31, 1910.

To the Secretary of the State Board of Health:

Total number of deaths from all causes during the year, 14,638.

Total number of births during the year, 22,320.

Number of nuisances abated during the year, 6634.

Inspections made of slaughterhouses and meat markets, 471. Condemned, 42.

New slaughterhouses built, 30.

Cases of anterior poliomyelitis the past year, 157; deaths, 56.

Salary of health officers, \$29,062.

Money spent by board, exclusive of salary of health officers, during 1910, \$26,116.51.

DEATHS—NUMBER AND CAUSES THEREOF.

(International Classification.)

1.—General Diseases.		No		
Typhoid fever.....	388		Alcoholism (acute or chronic).....	21
Relapsing fever.....	6		Chronic lead poisoning.....	1
Malaria.....	42		Other chronic poisonings.....	18
Smallpox.....	6			
Measles.....	100		2.—Diseases of the Nervous System and of	
Scarlet fever.....	103		the Organs of Special Sense.	
Whooping cough.....	50		Acute anterior poliomyelitis.....	53
Diphtheria and croup.....	186		Encephalitis.....	25
Influenza.....	85		Simple meningitis, including cerebro-	
Dysentery.....	114		spinal fever.....	169
Erysipelas.....	26		Locomotor ataxia.....	17
Purulent infection and septicemia.....	118		Other diseases of the spinal cord.....	85
Rabies.....	6		Cerebral or hæmorrhage apoplexy.....	428
Tetanus.....	27		Softening of the brain.....	105
Pellagra.....	2		Paralysis without specified cause.....	499
Tuberculosis of the lungs.....	735		General paralysis of the insane.....	45
Acute miliary tuberculosis.....	23		Other forms of mental alienation.....	36
Tuberculous meningitis.....	13		Epilepsy.....	48
Abdominal tuberculosis.....	24		Convulsions (nonpuerperal).....	19
Pott's disease.....	4		Convulsions of infants.....	58
Tuberculosis of other organs.....	62		Chorea.....	6
Disseminated tuberculosis.....	4		Neuralgia and neuritis.....	10
Ricketts.....	3		Other diseases of the nervous system....	71
Syphilis.....	14		Diseases of the eye and their annexa....	2
Cancer and other malignant tumors of the			Diseases of the ears.....	1
buccal cavity.....	20			
Cancer and other malignant tumors of the			3.—Diseases of the Circulatory System.	
stomach, liver.....	268		Pericarditis.....	89
Cancer and other malignant tumors of			Acute endocarditis.....	62
peritonæum, intestines, rectum.....	48		Organic diseases of the heart.....	938
Cancer and other malignant tumors of the			Angina pectoris.....	50
female genital organs.....	56		Diseases of the arteries, atheroma, aneu-	
Cancer and other malignant tumors of the			rysm, etc.....	61
breast.....	22		Embolism and thrombosis.....	47
Cancer and other malignant tumors of the			Diseases of the veins (varices, hæmor-	
skin.....	27		rhoids, phlebitis, etc).....	8
Cancer and other malignant tumors of			Diseases of the lymphatic system (lym-	
other organs and of organs not specified,	195		phangitis, etc.).....	3
Other tumors (tumors of the female geni-			Hæmorrhage; other diseases of the circu-	
tal organs excepted).....	131		latory system.....	107
Acute articular rheumatism.....	27			
Chronic rheumatism and gout.....	32		4.—Diseases of the Respiratory System.	
Scurvy.....	1		Diseases of the nasal fossæ.....	1
Diabetes.....	145		Diseases of the larynx.....	5
Exophthalmic goitre.....	18		Diseases of the thyroid body.....	10
Addison's disease.....	7		Acute bronchitis.....	62
Leuchæmia.....	14		Chronic bronchitis.....	41
Anæmia, chlorosis.....	24		Broncho-pneumonia.....	125
Other general diseases.....	152		Pneumonia.....	1,087

DEATHS—NUMBER AND CAUSES THEREOF—CONTINUED.

Pleurisy	13
Pulmonary congestion, pulmonary apoplexy	24
Gangrene of the lung	7
Asthma	72
Pulmonary emphysema	13
Other diseases of the respiratory system (tuberculosis excepted)	52

5.—Diseases of the Digestive System.

(Other) diseases of the mouth and adnexa	9
Diseases of the pharynx	2
Diseases of the esophagus	1
Ulcer of the stomach	35
Other diseases of the stomach (cancer excepted)	142
Diarrhea and enteritis (under 2 years)	316
Diarrhea and enteritis (2 years and over)	136
Ankylostomiasis	4
Intestinal parasites	5
Appendicitis and typhlitis	124
Hernias, intestinal obstructions	78
Other diseases of the intestines	72
Acute yellow atrophy of the liver	6
Hydatid tumor of the liver	4
Cirrhosis of the liver	47
Biliary calculi	34
Other diseases of the liver	76
Diseases of the spleen	4
Simple peritonitis (nonpuerperal)	179
Other diseases of the digestive system (cancer and tuberculosis excepted)	95

6.—Nonvenereal Diseases of the Genito-urinary System and Adnexa.

Acute nephritis	190
Bright's disease	361
Chyluria	4
Other diseases of the kidneys and adnexa	156
Calculi of the urinary passages	3
Diseases of the bladder	23
Diseases of the urethra urinary abscess, etc.	4
Diseases of the prostate	14
Nonvenereal diseases of the male genital organs	2
Uterine hæmorrhage (nonpuerperal)	3
Uterine tumor (noncancerous)	7
(Other) diseases of the uterus	6
Cysts and other tumors of the ovary	4
Salpingitis and other diseases of the female genital organs	20

7.—The Puerperal State.

Accidents of pregnancy	25
Puerperal hæmorrhage	15
Other accidents of labor	9
Puerperal septicæmia	50
Puerperal albuminuria and convulsions	14
Puerperal phlegmasia alba dolens, embolus, sudden death	3
Following childbirth (not otherwise defined)	13

8.—Diseases of the Skin and of the Cellular Tissue.

Gangrene	22
Furuncle	1
Acute abscess	19
Other diseases of the skin and adnexa	8

9.—Diseases of the Bones and of the Organs of Locomotion.

Diseases of the bones (tuberculosis excepted)	5
Diseases of the joints (tuberculosis and rheumatism excepted)	1
Amputations	5
Other diseases of the organs of locomotion	1

10.—Malformations.

Congenital malformations (stillbirths not included)	89
-----------------------------------------------------------	----

11.—Diseases of Early Infancy.

Congenital debility, icterus, and sclerema	147
Other diseases peculiar to early infancy	230
Lack of care	82

12.—Old Age.

Senility	907
----------------	-----

13.—Affections Produced by External Causes.

Suicide by poison	67
Suicide by hanging or strangulation	9
Suicide by drowning	7
Suicide by firearms	21
Suicide by cutting or piercing instruments	4
Suicide by crushing	2
Other suicides	20
Poisoning by food	15
Other acute poisonings	21
Conflagration	17
Burns (conflagration excepted)	91
Absorption of deleterious gases (conflagration excepted)	9
Accidental drowning	54
Traumatism by firearms	50
Traumatism by cutting or piercing instruments	10
Traumatism by fall	36
Traumatism in mines and quarries	23
Traumatism by machines	19
Traumatism by other crushing (vehicles, railroad, landslides, etc.)	158
Injury by animals	11
Starvation	12
Excessive cold	19
Effects of heat	6
Lightning	10
Electricity (lightning excepted)	6
Homicide by firearms	18
Homicide by cutting or piercing instruments	5
Homicide by other means	18
Fractures (cause not specified)	27
Other external violence	111

14.—Ill-defined Diseases.

Ill-defined organic disease	162
Sudden death	97
Cause of death not specified or ill-defined	1,981

Total 14,638

AGES OF THE DECEASED

	No.
Under 1 year	1,725
Between 1 and 2 years	449
Between 2 and 5 years	431
Between 5 and 10 years	338
Between 10 and 15 years	278
Between 15 and 20 years	433
Between 20 and 30 years	913
Between 30 and 40 years	789
Between 40 and 50 years	812
Between 50 and 60 years	1,079
Between 60 and 70 years	1,545
Between 70 and 80 years	1,603
Between 80 and 90 years	881
Between 90 and 100 years	122
Between 100 and 110 years	9
Above 110 years	1
Unknown ages	3,230

Total 14,638

DEATHS—NUMBER AND CAUSES THEREOF—CONCLUDED.

OCCUPATIONS OF THE DECEASED.			
	No.		
Attorneys	15	Laborers (farm)	161
Automobile dealers and garage men.....	7	Laborers (general)	478
Bakers	11	Laundry employees.....	12
Bankers	11	Linemen.....	2
Blacksmiths	26	Machinists and helpers.....	30
Barbers	24	Merchants	118
Bookbinders	2	Miners	99
Bookkeepers	14	Ministers	32
Bricklayers	11	Molders	4
Butchers	17	Musicians	7
Children under school age.....	1,730	Nurses	15
Contractors	25	Oil- and gas-well workers.....	4
Commercial travelers	11	Officials (public).....	16
Carpenters	75	Painters	21
Cooks	32	Paper hangers.....	12
Cigar makers and dealers	8	Planing-mill workers.....	2
Clerks (stores)	57	Physicians	22
Clerks (offices)	40	Policemen	7
Dentists	5	Printers and pressmen	5
Drivers and liverymen.....	32	Real-estate agents.....	23
Dressmakers	8	Salesmen	34
Druggists	16	Steam-railway employees (office).....	9
Editors and writers.....	2	Steam-railway employees (operating de- partment)	67
Electrical workers	6	Stockmen.....	17
Engineers (stationary)	4	Street-railway employees.....	12
Engineers (locomotive)	15	Shoemakers	16
Engravers and artists	8	Stenographers	11
Farmers (milk and dairy)	26	Stone and marble cutters.....	11
Farmers (general).....	1,485	Students and children of school age.....	526
Firemen (stationary)	13	Servants	57
Firemen (locomotive).....	17	Tailors	16
Housewives (farm)	781	Tinners	5
Housewives (other)	1,518	Teachers	31
Hotel and restaurant keepers	19	Undertakers	5
Insurance agents	14	Not specified.....	6,717
Jewelers and watchmakers.....	14		
		Total	14,638

APPENDIX.

Bulletins Issued, 1909 and 1910.

BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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No. 1.

JANUARY, 1909.

VOL. V.

Air,
Fresh air,
More fresh air,
Constant fresh air night and day
Is a deadly enemy to tuberculosis.

Efficient sanitary regulation is conditioned on accurate vital statistics.

CONTENTS OF THIS BULLETIN.

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Work of the State Board of Health, page 12.

Laboratory Work, page 14.

The Purpose of Vital Statistics, page 15.

VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1908.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State...total, December, 1907....	85 91	56 58	91 111	23 31	171 158	23 21	186 108	4 5	197 205	0 1	24 24	0 0
Allen	3	3	8	1	1	1	3	0	0	0	0	0
Anderson	0	0	0	0	2	0	2	0	0	0	0	0
Atchison	0	0	0	0	0	0	3	1	0	0	0	0
Barber	0	0	2	0	1	1	0	0	0	0	0	0
Barton	1	1	3	3	0	0	1	0	0	0	0	0
Bourbon	2	2	1	1	1	0	0	0	4	0	0	0
Brown	0	0	2	0	2	0	0	0	0	0	0	0
Butler	2	2	2	0	0	0	0	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
*Chautauqua	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	0	0	2	2	6	3	0	0	0	0	0	0
*Cheyenne	0	0	0	0	0	0	7	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
*Clay	0	0	0	0	0	0	0	0	0	0	0	0
*Cloud	0	0	1	0	1	0	0	0	0	0	0	0
Coffey	0	0	0	0	2	2	0	0	0	0	0	0
*Comanche	0	0	0	0	10	7	11	1	0	0	0	0
Cowley	0	0	9	0	0	0	2	0	0	0	0	0
Crawford	0	0	0	0	0	0	0	0	0	0	0	0
Decatur	0	0	0	0	0	0	1	0	0	0	0	0
*Dickinson	0	0	0	0	0	0	15	0	0	0	0	0
Doniphan	0	0	1	0	7	0	0	0	0	0	0	0
Douglas	3	2	0	0	6	0	13	0	0	0	0	0
*Edwards	0	0	0	0	6	0	0	0	0	0	0	0
Elk	0	0	9	0	6	0	0	0	0	0	0	0
Ellis	1	1	0	0	2	0	0	0	0	0	0	0
Ellsworth	1	1	2	2	0	0	0	0	0	0	0	0
Finney	0	0	1	1	4	0	0	0	0	0	0	0
Ford	0	0	0	0	2	0	15	0	1	0	0	0
Franklin	2	2	0	0	10	1	0	0	0	0	0	0
Geary	1	1	0	0	0	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
*Gray	0	0	2	0	0	0	0	0	0	0	0	0
Greeley	0	0	0	0	0	0	1	0	0	0	0	0
Greenwood	0	0	0	0	0	0	0	0	0	0	0	0
Hamilton	0	0	1	1	1	0	2	0	0	0	0	0
Harper	0	0	0	0	6	0	7	0	1	0	0	0
Harvey	1	1	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	3	0	10	0	0	0
Jackson	0	0	0	0	2	0	2	0	2	0	0	0
Jefferson	0	0	8	0	0	0	6	0	2	0	0	0
Jewell	0	0	0	0	0	0	0	0	0	0	0	0
*Johnson	0	0	2	0	0	0	0	0	0	0	0	0
Kearny	0	0	0	0	0	0	1	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	1	1	3	0	1	0	0	0	0	0
Labette	0	0	0	0	0	0	7	0	0	0	0	0
Lane	1	1	0	0	0	0	0	0	0	0	0	0
*Leavenworth	0	0	0	0	1	1	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0
*Linn	0	0	0	0	0	0	0	0	0	0	0	0
*Logan	1	1	0	0	1	1	0	0	0	0	0	0
Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Marion	0	0	0	0	0	0	0	0	0	0	0	0
Marshall	3	3	0	0	0	0	0	0	0	0	0	0
McPherson	0	0	1	1	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade.....	0	0	0	0	8	0	0	0	0	0	0	0
*Miami.....	0	0	0	0	0	0	0	0	0	0	0	0
Mitchell.....	1	1	0	0	1	0	0	0	0	0	0	0
Montgomery.....	0	0	1	1	14	2	2	1	7	0	0	0
*Morris.....	0	0	0	0	0	0	0	0	0	0	0	0
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	2	0	0	0
*Neosho.....	0	0	0	0	0	0	0	0	0	0	0	0
Ness.....	0	0	0	0	0	0	0	0	0	0	0	0
Norton.....	0	0	1	0	0	0	7	0	0	0	0	0
Osage.....	8	8	0	0	1	0	0	0	0	0	0	0
*Osborne.....	0	0	0	0	0	0	0	0	0	0	0	0
*Ottawa.....	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee.....	0	0	0	0	1	0	5	0	0	0	0	0
Phillips.....	4	4	3	1	4	0	1	1	2	0	0	0
Pottawatomie.....	0	0	2	0	0	0	2	0	14	0	0	0
Pratt.....	0	0	0	0	3	0	1	0	20	0	0	0
Rawlins.....	1	0	0	0	0	0	1	0	0	0	0	0
Reno.....	0	0	0	0	13	0	7	0	1	0	0	0
Republic.....	2	2	0	0	2	0	2	0	0	0	0	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
*Riley.....	0	0	0	0	0	0	0	0	0	0	0	0
Rooks.....	1	1	0	0	0	0	12	0	0	0	0	0
Rush.....	0	0	1	0	2	0	0	0	0	0	0	0
Russell.....	0	0	0	0	2	0	0	0	0	0	0	0
Saline.....	0	0	1	1	0	0	0	0	15	0	0	0
*Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	1	1	0	0	0	0	0	0	0	0	0	0
Seward.....	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee.....	0	0	0	0	0	0	2	0	4	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	1	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
*Smith.....	0	0	0	0	0	0	0	0	0	0	0	0
Stafford.....	1	1	1	1	6	0	2	0	1	0	0	0
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	0	0	0	0	4	0	8	0	2	0	0	0
Thomas.....	0	0	1	1	0	0	4	0	0	0	0	0
Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wallace.....	0	0	0	0	0	0	0	0	0	0	0	0
Washington.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
*Wilson.....	0	0	0	0	0	0	0	0	0	0	0	0
Woodson.....	8	2	0	0	0	0	0	0	0	0	0	0
Wyandotte.....	0	0	6	0	5	0	2	0	0	0	0	0
Cities:												
Atchison.....	0	0	0	0	4	1	0	0	1	0	0	0
Coffeyville.....	8	8	1	0	0	0	0	0	0	0	0	0
Kansas City.....	11	9	12	4	18	1	18	0	2	0	1	0
*Leavenworth.....	0	0	0	0	0	0	0	0	0	0	0	0
Parsons.....	4	8	0	0	6	2	8	0	0	0	5	0
Pittsburg.....	0	0	0	0	8	0	7	0	36	0	2	0
Topeka.....	4	4	1	1	7	0	2	0	32	0	2	0
*Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
State Institutions,	24	1	0	0	0	0	0	0	0	0	0	0

* No report.

† No health officer.

Make it possible to definitely locate the centers of infection, and your health department will then be responsible if they are not cleaned up.

FOOD ANALYSIS No. XX.

By PROF. E. H. S. BAILEY, Ph. D., Chemist for State Board of Health, and PROF. H. L. JACKSON, B. S., Food Analyst.

BEVERAGES.

(Examined for saccharine; none found).

No.	Name.	Declarations.
6286	Lemon Soda	No color.
6287	Strawberry Soda	Artificial flavor and color declared.
6288	Cream Soda	" "
6289	Blood Orange Soda	" "
6290	Sarsaparilla Soda	" "
6291	Lemon Sour Soda	" "
6293	Cola	" "
6299	Not labeled	Not declared. Illegal.
6306	Vanilla Soda.	Artificial flavor and color declared.
6307	Strawberry Soda	" "
6308	Cherry Phosphate	" "
6309	Lemon Sour	" "
6310	Peach Mellow	" "
6311	Ginger Ale	" "
6312	Root Beer	" "
6313	Blood Orange	" "

Attention is called to No. 6299, manufacturer, The Pawnee Bottling Works, Pawnee, Neb. Purchased by Inspector Bell from retailer, V. A. Bird, Bern, Kan., November 17, 1908. This sample of artificial soda-water bears no label whatever, which is held to be misbranding, as this is an artificially flavored and colored imitation strawberry soda-water. Illegal.

No. 1380. Vanilla Extract. This is a vanilla flavoring composed of vanilla, vanilin, coumarin, and colored with caramel. It is properly labeled, and it is therefore passed.

No. 7289. Lemon Extract. This is a second lot from the manufacturer who had previously been reported as manufacturing an illegal lemon extract. This sample, however, contains over 5 per cent. of lemon oil and is, therefore, legal and passed.

No. 1467. Pickles. Sample of pickles labeled "Spiced Gherkins, prepared with turmeric, alum, and one-tenth of one per cent. benzoate of soda." Examined for copper and coal-tar dye, which were not found. Passed.

MALT BEVERAGES.

No. 3286D. Absolute alcohol by volume 2 per cent. Passed.

No. 3286E. Absolute alcohol by volume 1.87 per cent. Passed.

No. 3286F. Absolute alcohol by volume 1.70 per cent. Passed.

No. 7240B. Absolute alcohol by volume less than .4 of 1 per cent. Passed.

No. 7240C. Absolute alcohol by volume less than .4 of 1 per cent. Passed.

VINEGAR.

No. 7237. Labeled "Country Cider Vinegar." Manufacturer, G. C. Mason, Arcadia, Kan. Retailer, C. L. Day, Arcadia. Purchased August 28, 1908, by Inspector A. G. Pike. Sold from a barrel marked Heinz & Co.

Solids..... 1.13 gm. in 100 centimeters.
 Ash..... .18 gm. in 100 centimeters.
 Acid..... 2.60 gm. in 100 centimeters.
 Alkalinity of ash from 100 cc.... 23.08 cc. N/10 acid.

The above analysis shows this to be adulterated, and therefore illegal, and the sale of "country cider vinegar" from a barrel marked Heinz & Company is misbranding. The analysis shows that the sample has probably been watered considerably.

VINEGAR.

No.	Solids.	Ash.	Acid.	Alkalinity of ash.	Disposal.
1456	4.05	.36	4.03	33.28	Passed.
7195	3.50	.79	3.86	46 88	Illegal.
7196	4.58	.61	7.03	38 10	Passed.
7216	2.48	.32	2.44	38.88	Illegal.
7237	1.13	.18	2.60	23.10	Illegal.
7311	1.76	.32	6.74	35.60	Passed.
7326	2.76	.65	4.39	37.70	Passed.
7376	1.85	.39	4.15	50.68	Passed.
7378	3.08	.35	2.82	—	Illegal.

No. 7216. Manufacturer, I. F. Burkmaster, Fort Scott, Kan.; retailer, D. Baker, Fort Scott, Kan.; purchased August, 1908. Illegal.

No. 7237. Label, Country Cider Vinegar; manufacturer, G. C. Mason, Arcadia, Kan.; retailer, C. L. Day, Arcadia, Kan.; purchased August 28, 1908. This is a watered cider vinegar. Illegal.

No. 7378. Label, "Johnson's Pure Cider Vinegar, guaranteed under both federal and state pure food laws." Manufacturer, The Johnson Bottling Company, Winfield and Anthony, Kan.; retailer, Fleshman & Cooper, Winfield, Kan.; purchased December 10, 1908. This sample was also short measure to the extent of 8 per cent. in one quart bottle, and 4.9 per cent. in another quart bottle. Illegal.

QIDER.

No. 3431. Label taken from jug found at Peg McClafferty's, Topeka, November 12, 1908. Absolute alcohol by volume, 5.99 per cent.

No. 3432. Label taken from barrel found at Peg McClafferty's,

Topeka, November 12, 1908. Absolute alcohol by volume, 5.92 per cent.

MILK.

No. 3251B. This sample gave 4.83 per cent. butter-fat and is passed. From W. J. Day.

No. 3251C. From Chamney & Son. Fat, 4.35 per cent. Passed.

No. 3251D. Peerless Restaurant. Fat, 3.30 per cent.; solids not fat, 7.97 per cent.; ash, 0.54 per cent. The above data indicate watering. Illegal.

The above samples of milk were taken in Lawrence, Kan., October 29, 1908. Preservatives were not found.

CANDY.

No. 3500A. Manufacturer, C. W. Chase & Son, St. Joseph, Mo. Retailer, Wm. Weidemann, Lawrence, Kan. Purchased December 12, 1908. This candy consisted of pieces of peanut brittle, covered over with a sugar coating, and sold for 20 cents a pound. Thirty-six pieces were examined, and in piece No. 1, 4.1 per cent. of stone was found; in piece No. 2, 2.51 per cent. of stone was found. In the twentieth piece a piece of dirt, amounting to 1.06 per cent. and about the size of a large pea, was found. None of the other pieces were found to contain stone or dirt and so it was assumed that the above findings indicate only a good deal of carelessness on the part of the manufacturer.

MAPLE SYRUP.

No. 5320. This sample has all the characteristics of pure maple syrup, and is passed.

MEAT FLOUR.

No. 7377. This was found upon examination to contain no soluble salt, and to consist of corn flour. It is passed.

DRUG ANALYSES No. XVI.

By **PROFS. L. E. SAYRE** and **A. ZIEFLE**, Drug Analysts for the State Board of Health.

LAWRENCE, KAN., January 21, 1909.

Report XVI on drug analyses is herewith submitted.

It seems that the articles which have heretofore been reported as substandard are now being more carefully and accurately made and the products more uniformly official. There are some preparations above standard. This is due to carelessness, undoubtedly; but if a spirit of comphor, the official strength of which is 10 per cent., analyzes 14 per cent. (as samples have), it would seem that

the principal disadvantage results in the loss to the druggist who dispenses it. If he adds 4 per cent. more of camphor than is necessary it is his own loss, but there is no harm or danger in the use of the resulting preparation. If, however, such carelessness were to be exercised in the manufacture of more potent drug preparations, it would then become a very serious matter.

It is gratifying to note that since the Board of Health has called attention to the subject of deterioration in drugs and preparations druggists are becoming interested in this phase of the application of the food and drugs law. One druggist of Kansas writes to the *Bulletin of Pharmacy*: "After taking possession of the store, I threw out 8 per cent. of the stock, because it had become unsalable, owing to age and exposure on shelves." There are doubtless many druggists who are doing the same thing, their attention having been called to this matter of deterioration by your Board of Health.

Our inspectors send in frequently, however, material which has all marks of age; the label and contents of the containers show this unmistakably, yet the analysis of the material conforms to the standard, sufficiently, at least, to pass. Just how long quinine gelatin-coated pills, belladonna and aloin compound pills and like material will keep and be regarded as reliable is difficult to say. Judging from our experience it seems that some druggists have the idea that all this kind of drug material is still good at the age of twenty years. It would seem as a matter of business that discolored labels and discolored contents of bottles should not be exposed for sale, because it is well known that such goods must compete with fresher looking material of other stocks, and it would seem further that manufacturers would see to it that their goods thus aged would be replaced, or they should advise that such stock be discarded after a certain period of time. Manufacturers could do much to improve conditions if they would cooperate with your Board and state how long, in their opinion, certain preparations of their make could be relied upon.

The following drugs, and the results of their examination, are herewith submitted:

No. 2354. Sent by Doctor Crumbine. Lime Water. S. W. Durrant, Topeka, Kan. The sample contains a dirty brown sediment, and is about one-quarter the official strength. Below standard.

No. 2355, Insp. No. 1312. Spirits of Camphor. S. M. Schep- per, Bonner Springs. The sample contains 11 per cent. of camphor, 12 per cent. of water. Substandard.

No. 2356, Insp. No. 1313. Spirits of Nitre. W. H. Finley, Holliday. From the Poehler Mercantile Company, Lawrence, Kan. The sample contains less than 0.2 of 1 per cent. of ethyl nitrite. Below standard.

No. 2357, Insp. No. 1314. Sweet Spirits of Nitre. W. H. Finley, Holliday. From the Poehler Mercantile Company, Lawrence, Kan. The sample contains less than 0.2 of 1 per cent. of ethyl nitrite. Below standard.

No. 2358, Insp. No. 1315. Spirits of Camphor. H. A. White, Eudora, Kan. Sample contains 11 per cent. of camphor. Above standard.

No. 2359, Insp. No. 1316. Nux Vomica. B. C. Culp, De Soto. The sample contains starch and an excessive amount of nux vomica hairs. Sample is too small for assay.

No. 2361, Insp. No. 1318. Ground Mustard. B. C. Culp, De Soto. Passed.

No. 2363, Insp. No. 1319. Concentrated Essence of Ginger. B. C. Culp, De Soto. Prepared by the Pfeiffer Chemical Company, St. Louis. Passed.

No. 2363, Insp. No. 1320. Essence of Peppermint. Geo. B. Cloon, Le Loup. The sample contained less than 1 per cent. of oil of peppermint. Below standard.

No. 2364, Insp. No. 1321. Essence of Jamaica Ginger. Geo. B. Cloon, Le Loup. The sample contains 51.7 per cent. of alcohol. Passed.

No. 2365, Insp. No. 1322. Solution of Carbolic Acid. Geo. B. Cloon, Le Loup. From the Poehler Mercantile Company, Lawrence, Kan. The sample contains less than 1 per cent. of phenol.

No. 2368, Insp. No. 1325. Spirits of Camphor. G. N. Jewett, Edgerton. The sample contains 12.5 per cent. of camphor. Above standard.

No. 2371, Insp. No. 1328. Spirits of Camphor. J. T. Pindell, Wilkville. The sample contains .12 per cent. of camphor, 7.4 per cent. water. Adulterated.

No. 2372, Insp. No. 1331. Spirits of Camphor. J. D. Armstrong, Gardner. Sample contains 12 per cent. of camphor. Above standard.

No. 2375, Insp. No. 1335. Spirits of Camphor. Dr. M. H. Keeper, Kansas City, Kan. The sample contains 4 per cent. of camphor. Below standard.

No. 2376, Insp. No. 1336. Tincture of Iodine. Dr. M. H. Keeper,

Kansas City, Kan. The sample contains 4.55 gms. of iodine in 100 cc. and no potassium Iodide. Below standard.

No. 2377, Insp. No. 1337. Essence of Peppermint. Dr. M. H. Keeper, Kansas City, Kan. The sample contains 1.56 per cent. of oil of peppermint. Below standard.

No. 2378, Insp. No. 1338. Oil of Gaultheria. Dr. M. H. Keeper, Kansas City, Kan. The sample contains a brown precipitate, which is foreign to oil of gaultheria. The original bottle from which the sample was taken was labeled "Oil of Gaultheria," and after being sold was labeled "Untrue Oil of Wintergreen." Sample sold for 40 cents an ounce.

No. 2379, Insp. No. 1339. Spirits of Camphor. A. L. Settles, 2100 May street, Kansas City, Kan. Sample contains 9 per cent. of camphor (10 per cent. is standard). Passed.

No. 2381, Insp. No. 1341. Spirits of Camphor. G. R. Rice, Kansas City, Kan. The sample contains 8 per cent. of camphor and 22.5 per cent. of water. Adulterated.

No. 2383, Insp. No. 1342. Tincture of Iodine. M. E. Callery, Kansas City, Kan. The sample contains 4.75 gms. of iodine in 100 cc. and no potassium iodide. Below standard.

No. 2383, Insp. No. 1343. Spirits of Camphor. H. E. Dengel, Kansas City, Kan. The sample contains 5.5 per cent. of camphor. Below standard.

No. 2384, Insp. No. 1344. Spirits of Camphor. E. R. Russell, Kansas City, Kan. The sample contains 12 per cent. of camphor. Above standard.

No. 2385, Insp. No. 1345. Spirits of Camphor. D. G. Jones, Kansas City, Kan. The sample contains 12 per cent. of camphor. Above standard.

No. 2386, Insp. No. 1346. Tincture of Iodine. D. G. Jones, Kansas City, Kan. The sample contains 8.05 gms. of iodine. Sub-standard.

No. 2387, Insp. No. 1348. Spirits of Camphor. B. F. Mauser, Kansas City, Kan. The sample contains 13.5 per cent. of camphor. Above standard.

No. 2389, Insp. No. 1349. Spirits of Camphor. J. A. Woods, Kansas City, Kan. The sample contains 11 per cent. of camphor. Above standard.

No. 2390, Insp. No. 1350. Tincture of Iodine. Wyandotte Drug Company, Kansas City, Kan. The sample contains 6.25 gms. of Iodine in 100 cc. and no potassium iodide. Passed.

No. 2393, Insp. No. 1352. Spirits of Camphor. Flagg Pharmacy,

Kansas City, Kan. The sample contains 11.1 per cent. of camphor. Above standard.

No. 2393, Insp. No. 1353. Spirits of Camphor. H. J. McGee, Kansas City, Kan. The sample contains 14 per cent. of camphor. Above standard.

No. 2394, Insp. No. 1354. Spirits of Camphor. Cleverdon Bros., Leavenworth. The sample contains 13 per cent. of camphor. Above standard.

No. 2395, Insp. No. 1355. Spirits of Camphor. Fred D. Voss, Leavenworth. The sample contains 11 per cent. of camphor. Above standard.

No. 2396, Insp. No. 1356. Spirits of Camphor. D. G. Strauss, Leavenworth. The sample contains 12 per cent. of camphor and 16.4 per cent. of water. Adulterated.

No. 2397, Insp. No. 1357. Spirits of Camphor. R. L. Igel, Leavenworth. The sample contains 11 per cent. of camphor. Above standard.

No. 2399, Insp. No. 1359. Spirits of Camphor. Alfred Dietrich, Easton. The sample contains 10 per cent. of camphor. Passed.

No. 2400, Insp. No. 1360. Spirits of Camphor. G. W. Shaw, Porter. The sample contains 14 per cent. camphor. Above standard.

No. 2401, Insp. No. 1361. Spirits of Camphor. F. Shudrowitz, Lansing. The sample contains 13 per cent. of camphor. Above standard.

No. 2403, Insp. No. 1362. Spirits of Camphor. B. W. Otterman, Kansas City, Kan. The sample contains 10 per cent. of camphor and 17.4 per cent. water. Adulterated.

No. 2403, Insp. No. 1363. Tincture of Iodine. B. W. Otterman, Kansas City, Kan. The sample contains 3.12 gms. of iodine in 100 cc. Below standard.

No. 2404, Insp. No. 1364. Spirits of Camphor. A. A. Acker, Kansas City, Kan. The sample contains 13 per cent. of camphor. Above standard.

No. 2406, Insp. No. 1366. Spirits of Camphor. W. A. Ackerman, Kansas City, Kan. The sample contains 22 per cent. of camphor. Above standard.

No. 2407, Insp. No. 1367. Spirits of Camphor. W. W. Marsh, Kansas City, Kan. The sample contains 12 per cent. of camphor. Above standard.

No. 2408, Insp. No. 1367. Spirits of Camphor. D. T. Otter-

man, Kansas City, Kan. The sample contains 12 per cent. of camphor. Above standard.

No. 2409, Insp. No. 1369. Tincture of Camphor. Adolph Lange, Leavenworth. The sample contains 13 per cent. of camphor, and 17 per cent. of water. Adulterated.

No. 2410, Insp. No. 1370. Spirits of Camphor. J. M. Ables, Leavenworth. The sample contains 14 per cent. of camphor. Above standard.

No. 2411, Insp. No. 1371. Spirits of Camphor. Chas. Rebsamen, Leavenworth. The sample contains 10 per cent. of camphor and 7.4 per cent. water. Adulterated.

No. 2413, Insp. No. 1373. Spirits of Camphor. S. M. Dotterer, Leavenworth. The sample contains 10 per cent. of camphor. Passed.

No. 2414, Insp. No. 1374. Spirits of Camphor. Ed C. Fritsche, Leavenworth. The sample contains 10 per cent. of camphor. Passed.

No. 2415, Insp. No. 1375. Spirits of Camphor. Mehl & Schott, Leavenworth. The sample contains 11 per cent. of camphor. Above standard.

No. 2416, Insp. No. 1376. Spirits of Camphor. Geo. A. Eddy Drug Company, Leavenworth. The sample contains 13 per cent. of camphor. Above standard.

No. 2418, Insp. No. 1378. Essence of Peppermint. J. J. Keller, Wolcott. The sample contains 1.25 per cent. oil of peppermint. Below standard.

No. 2421, Insp. No. 1382. Tincture of Iodine. C. R. Stewart, Stillman. The sample contains 5.13 gms. of iodine in 100 cc. and no potassium iodide. Adulterated.

No. 2422, Insp. No. 1383. Seidlitz Powders. Dr. W. C. Whimster Kansas City, Kan. Passed.

No. 2423, Insp. No. 1384. Spirits of Camphor. Dr. W. C. Whimster, Kansas City, Kan. The sample contained 11.5 per cent. of camphor. Above standard.

No. 2424, Insp. No. 1385. Spirits of Camphor. F. L. Burns, Kansas City, Kan. The sample contains 12 per cent. of camphor. Above standard.

No. 2425, Insp. No. 1386. Lime Water. F. L. Burns, Kansas City, Kan. Passed.

No. 2426, Insp. No. 1387. Tincture of Iodine. C. E. Seaman, Kansas City, Kan. Passed.

No. 2427, Insp. No. 1389. Seidlitz Powders. C. F. Malloy, Kansas City, Kan. Passed.

No. 2428, Insp. No. 1390. Spirits of Camphor. C. F. Malloy, Kansas City, Kan. The sample contains 11 per cent. of camphor, 13.8 per cent. water. Adulterated.

No. 2429, Insp. No. 1391. Lime Water. C. F. Malloy, Kansas City, Kan. Passed.

No. 2430, Insp. No. 1392. Spirits of Camphor. Tom Lilly, Kansas City, Kan. The sample contained 13 per cent. of camphor, 3.9 per cent. water. Adulterated.

No. 2431, Insp. No. 1393. Carbolic Acid. Tom Lilly, Kansas City, Kan. The sample contains 80.4 per cent. phenol. Passed.

Contributions of the Food and Drug Laboratories of the University to the Work of the State Board of Health.

That the University is taking an active part in the development of the state and in attention to the comfort and health of the people is evident when we inspect the investigational work connected with food and drugs, resulting from the application of the food and drugs law, in the Chemistry and Pharmacy building.

Devoted to analysis of foods one finds a large, well-lighted room, fitted up with all the modern apparatus especially needed for the work. On shelves in the laboratory, and packed away in the cupboards, are the samples as they are sent in by the food inspectors of the Board of Health. There are three samples of each food sent, and these are sealed with the special seal of the secretary of the Board of Health. At the present time Professor Jackson is busy with the examination of sirups, vinegars and extracts. Previous to the enactment of the pure food and drugs law the state was overrun with a great variety of frauds in all these lines. The common foods in use were not so often injurious to health as they were a fraud on the consumer from being misbranded. Enterprising manufacturers for years have been putting up a sugar sirup, flavored with an extract of various barks, and selling it as *absolutely* pure maple sirup. An article labeled pure cider vinegar was, in fact, a distilled vinegar, colored. This, although wholesome enough, was a cheaper product than cider vinegar, and consequently the consumer was defrauded. The extracts of lemon and vanilla were colored and flavored to somewhat resemble the genuine article, but were, after all, little better than dilute alcohol, flavored and colored to resemble the genuine article.

In this laboratory there are to be seen long rows of canned goods, jams, jellies, baking-powders, pickles, olive-oils, candy, chocolate, cider and various soft drinks awaiting analysis. If the foods are found to be adulterated or misbranded, immediate notice is sent to the secretary of the State Board of Health, and proceedings against the manufacturer or dealer are instituted by the county attorney in the district where the material has been purchased. As this kind of analysis has been going on for more than three years we have a chance to see the great improvement that has been made in food. By looking over the cards showing the analyses made within the last year and a half, we see that thirty-two different kinds of foods and beverages, and many different samples of most of them, have been examined. Fifty-eight per cent. of the samples analyzed were found to be illegal. Some of the reasons why these foods were condemned are as follows:

The apple butter and catsup contained preservatives; beer was falsely labeled as to the amount of alcohol contained; extracts were artificial, containing coal-tar colors; "Hamburg steak" was "preserved" and colored, in order to make it look like fresh material, by the use of sulfites; soft drinks were sweetened with saccharin, made from coal-tar, etc. It is therefore evident that there is still need for inspectors and analysts.

In another room in the same building, across the hall, and also on the floor above, are the rooms devoted to the work of the state water survey. The department of chemistry has carried on the work during the past two years in connection with the United States Geological Survey, which organization attended to the collection of samples. The waters of the chief rivers of the state have been analyzed, daily samples being taken for this purpose. These analyses, which will be published shortly, will show what the rivers are carrying out of the state, both in solution and as suspended mud.

As water-works are being installed and the older systems extended in the various cities, there is a constant demand upon this laboratory for the analysis of the proposed supply, so as to secure the best water available.

This laboratory also assists the Board of Health in tracing the cause of various epidemics, such as typhoid fever, in the larger cities, and numerous analyses of well-water have been made. It is proposed to extend the work to a more complete examination of the industrial waste that is carried off by the streams, and also to study the problem of purification of water-supply for city use.

E. H. S. BAILEY.

Laboratory Work.

The laboratory for drug analysis devoted to State Board of Health work is located on the first floor of the northeast corner of the Chemistry and Pharmacy building, under the direction of the dean of the department. Mr. Floyd Tilford acts as drug inspector, under direction of Dr. S. J. Crumbine, chief food and drug inspector, capitol building, Topeka.

To give some idea of the work thus far accomplished under this portion of the food and drugs law, a summary of the work effected is here given.

Specimens of drugs and preparations have been collected and analyzed from 107 different towns and cities in the state. They have been visited by the drug inspector and analyses of various drugs and preparations collected from them, amounting in the aggregate to about 1000 different articles, and including about 140 varieties of medicinal articles.

The work of the food inspection in connection with the food laboratory has covered a much wider range than this, owing to the fact that there have been three food inspectors in the state, while

there has been but one drug inspector. The monthly BULLETINS of the State Board of Health have given the best résumé of the work that has been accomplished in both laboratories.

In connection with this work, one of the problems that confronted the officers charged with the enforcement of the food and drugs law, immediately after its passage, was how to bring its provisions quickly before the manufacturers, merchants and dealers of the state. It was evident that this ought to be done in such a way as to produce the least friction and secure the greatest harmony.

To bring this about the chief food and drug inspector, Doctor Crumbine, with the directors of the laboratories, made arrangements to visit the business centers of the state, and public meetings were held with the jobbers, manufacturers, wholesalers and retailers who were interested in foods and drugs. The principal cities of the state have thus been visited and a thorough campaign of instruction has been conducted. The result has been that it has very materially assisted the work of inspection and made the application of the law effective almost from the beginning.

JANUARY 20, 1909.

L. E. SAYRE.

The Purpose of Vital Statistics.

These records are of value in two ways: to the sanitarian working for the prevention of disease and the prolongation of life, and to the individual. Large sums of money are being expended annually in properly disposing of sewage, in filtering and protecting public water-supplies, in disinfection, in carrying out the anti-tuberculosis crusade by sanatoria, dispensaries, educational measures, etc. How can we determine if this money is being spent to the best advantage unless we can see their effect upon the death-rate? How can we really judge the health conditions, the sanitary aspects of a community, unless we have an accurate birth-rate to compare with the death-rate?

To the individual directly, too, registration of births and deaths is important. There is hardly a relation in life in which such a record may not be evidence of the greatest value. In the matter of inheriting property; in the administration of estates; as an insurance proof to establish the exact age of the insured; in determining whether individuals are of legal marriageable age; in voting; in jury and military service; in many avenues of professional and official life; in carrying out the provisions of laws relating to education and child labor, and in numerous other ways, records of this character are often of the highest importance. It would seem that there are but few people whose birth, marriage or death does not at some time become a matter of official or legal cognizance.—*Bulletin New York Department of Health.*

THE OLD OAKEN BUCKET

As seen from a sanitary point of view.

With what anguish of mind I remember my childhood,
Recalled in the light of a knowledge since gained;
The malarial farm, the wet, fungus-grown wildwood,
The chills there contracted that since have remained.
The scum-covered duck-pond, the pig-sty close by it;
The place where the sour-smelling house-drainage fell;
The hut of my father, the barn-yard just nigh it,
But worse than all else was the horrible smell.

The old oaken bucket,
The iron-bound bucket,
The moss-covered bucket
That hung in the well.

Just think of it! Moss on the vessel that lifted
The water I drank in the days called to mind;
Ere I learned what professors and scientists gifted,
In water of wells by analysis find.
The rotting wood fiber, the oxide of iron;
The algæ and toads of unusual size;
The water impure as the verses of Byron,
Are things I remember with tears in my eyes.

(Refrain.)

How little I thought of the typhoid fever
That lurked in the water I ventured to drink;
But since I've become a devoted believer
In teachings of science, I shudder to think.
Perhaps I had boiled and afterward strained it,
Through filters of charcoal and gravel combined,
And after distilling, condensed and regained it
In portable form with its filth left behind.

(Refrain.)

And now far removed from the scene I'm describing;
Emotions of grief large as tea-kettles swell;
My memory reverts to my youthful imbibing,
And I gag at the thought of that horrible well.

The old oaken bucket,
The iron-bound bucket,
The moss-covered bucket
That hung in the well.

BULLETIN

OF THE

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No. 2.

FEBRUARY, 1909.

VOL. V.

"Genius is only another name for tireless patience."

"Promotion comes from preparation, and not from luck."

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VITAL STATISTICS Reported to the Kansas Board of Health for January, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State... total, January, 1908.....	68 72	48 50	36 48	15 6	127 132	18 21	132 122	4 8	198 459	1 1	111 107	1 1
Allen	2	1	1	0	3	0	2	0	6	0	0	0
Anderson	0	0	0	0	3	0	1	0	0	0	0	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
*Barber	0	0	0	0	0	0	0	0	0	0	0	0
Barton	0	0	0	0	0	0	3	0	0	0	0	0
*Bourbon	0	0	0	0	0	0	0	0	0	0	0	0
Brown	2	2	2	1	0	0	4	0	5	0	0	0
*Butler	0	0	0	0	0	0	0	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua.....	0	0	0	0	3	1	1	0	0	0	0	0
Cherokee.....	1	1	0	0	10	0	3	0	22	0	0	0
*Cheyenne.....	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	1	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
*Cloud	0	0	0	0	0	0	0	0	0	0	0	0
Coffey	1	0	0	0	1	1	0	0	0	0	0	0
*Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley.....	1	1	0	0	1	0	1	0	0	0	0	0
Crawford.....	3	3	3	3	5	0	3	1	7	0	4	0
Decatur.....	0	0	0	0	0	0	7	0	1	0	0	0
Dickinson.....	0	0	0	0	1	0	0	0	0	0	0	0
Doniphan.....	0	0	0	0	0	0	0	0	0	0	0	0
Douglas.....	3	3	0	0	4	0	3	0	0	0	2	0
*Edwards.....	0	0	0	0	0	0	0	0	0	0	0	0
*Elk	0	0	0	0	0	0	0	0	0	0	0	0
Ellis	0	0	2	2	2	0	2	0	0	0	0	0
Ellsworth.....	0	0	0	0	2	0	0	0	0	0	0	0
Finney.....	0	0	0	0	0	0	0	0	0	0	0	0
Ford	1	0	0	0	1	0	1	0	2	0	0	0
Franklin.....	1	1	1	1	2	1	0	0	0	0	0	0
*Geary	0	0	0	0	0	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham.....	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	4	0
*Gray	0	0	0	0	0	0	0	0	0	0	0	0
*Greeley	0	0	0	0	0	0	0	0	0	0	0	0
*Greenwood.....	0	0	0	0	0	0	0	0	0	0	0	0
*Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
Harper.....	1	1	0	0	0	0	0	0	0	0	0	0
Harvey	0	0	0	0	0	0	4	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	0	0	1	0	1	0	0	0	0	0	0	0
*Jackson.....	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson.....	0	0	1	0	1	0	0	0	13	0	0	0
*Jewell	0	0	0	0	0	0	0	0	0	0	0	0
*Johnson.....	0	0	0	0	0	0	0	0	0	0	0	0
Kearny	0	0	1	0	0	0	0	0	0	0	2	0
Kingman	2	1	1	1	1	0	0	0	0	0	0	0
*Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
*Labette.....	0	0	0	0	0	0	0	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	4	0	0	0
Leavenworth.....	3	3	0	0	1	0	9	0	0	0	1	1
Lincoln	0	0	0	0	1	1	1	0	0	0	0	0
*Linn	0	0	0	0	0	0	0	0	0	0	0	0
*Logan	0	0	0	0	0	0	0	0	0	0	0	0
*Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Marion.....	2	1	0	0	2	0	1	0	0	0	0	0
Marshall.....	0	0	0	0	0	0	1	0	1	0	0	0
McPherson.....	0	0	0	0	0	0	0	0	1	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	1	0	3	0	0	0	0	0	8	0
*Miami	0	0	0	0	3	0	3	0	0	0	0	0
Mitchell	0	0	0	0	3	0	3	0	0	0	0	0
Montgomery	1	1	0	0	4	0	2	0	1	0	0	0
*Morris	0	0	0	0	0	0	0	0	0	0	0	0
Morton	0	0	0	0	0	0	0	0	0	0	0	0
*Nemaha	0	0	0	0	0	0	0	0	0	0	0	0
*Neosho	0	0	0	0	0	0	0	0	0	0	0	0
Ness	1	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	3	0	0	0	0	0
Osage	0	0	0	0	0	0	0	0	0	0	0	0
*Osborne	0	0	0	0	0	0	0	0	0	0	0	0
*Ottawa	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee	0	0	0	0	2	0	1	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	3	0	0	0
*Pottawatomie	0	0	0	0	0	0	0	0	0	0	0	0
*Pratt	0	0	0	0	0	0	0	0	0	0	0	0
*Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Reno	1	0	0	0	7	1	14	2	1	1	0	0
Republic	0	0	0	0	0	0	1	1	0	0	0	0
*Rice	0	0	0	0	0	0	0	0	0	0	0	0
*Riley	0	0	0	0	0	0	0	0	0	0	0	0
Rooks	0	0	0	0	0	0	0	0	3	0	0	0
*Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	0	0	1	1	0	0	0	0	0	0	0	0
Salina	2	2	0	0	2	1	0	0	17	0	2	0
Scott	1	1	0	0	0	0	0	0	0	0	0	0
Sedgwick	0	0	0	0	0	0	0	0	0	0	0	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	1	0	0	0	6	3	1	0	2	0	1	0
Sheridan	0	0	0	0	0	0	0	0	2	0	0	0
Sherman	1	1	0	0	0	0	0	0	0	0	0	0
*Smith	0	0	0	0	0	0	0	0	0	0	0	0
*Stafford	0	0	0	0	0	0	0	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
†Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	0	0	0	0	1	0	1	0	1	0	0	0
Thomas	0	0	3	0	0	0	6	0	2	0	0	0
Trego	0	0	0	0	4	3	0	0	0	0	0	0
Wabaunsee	0	0	0	0	2	0	2	0	3	0	1	0
Wallace	0	0	1	0	0	0	0	0	2	0	0	0
Washington	0	0	0	0	4	1	0	0	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
*Wilson	0	0	0	0	0	0	0	0	0	0	0	0
Woodson	0	0	0	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	1	0	1	0	1	0	0	0	1	0
Cities:												
Atchison	0	0	0	0	3	0	1	0	1	0	0	0
Coffeyville	3	2	2	1	2	0	0	0	0	0	0	0
Fort Scott	6	3	2	0	0	0	1	0	0	0	0	0
Kansas City	11	10	9	2	20	3	9	0	3	0	5	0
Leavenworth	2	1	2	2	3	0	2	0	0	0	0	0
Parsons	5	0	1	1	6	1	6	0	3	0	3	0
Pittsburg	2	0	0	0	2	0	7	0	0	0	0	0
Topeka	1	1	0	0	3	1	8	0	3	0	3	0
*Wichita	0	0	0	0	0	0	0	0	0	0	0	0
State Institutions.	2	0	0	0	0	0	0	0	0	0	0	0

* No report.

† No health officer.

Some reforms only touch the average citizen once in a lifetime, but the enforcement of honest weights and measures touches every human being at every moment of every day.—Governor Guild.

FOOD ANALYSES No. XXI.

By PROF. J. T. WILLARD, Analyst for the Board.

MANHATTAN, KAN., February 18, 1909.

In the following pages a presentation is made of the results obtained upon most of the inspection samples of food submitted since the last report:

MILK.

Ins. No.	Serial No.				
6315	2545	L. C. Turner (from J. H. McMahon's wagon).	Argentine.....	2.50	Illegal.
6316	2546	J. H. McMahon.	"	3.75	Passed.
6317	2547	J. S. McColley.	"	4.80	"
6318	2548	Interstate Dairy.	"	4.60	"
7353	2557	C. C. Henderson.	Arkansas City..	2.10	Illegal.
7355	2559	A. & C. Dairy and Produce Company.	"	3.30	Passed.
7356	2560	A. C. Burke.	"	3.75	"
7357	2561	D. C. Davis.	"	4.55	"
7358	2562	W. E. Brennan.	"	4.00	"
6276	2491	P. Miller.	Atchison.....	4.00	"
6277	2492	Mrs. C. Spatz.	"	4.65	"
6278	2493	M. Dooley.	"	5.40	"
6279	2494	J. D. Adams.	"	4.20	"
6280	2495	L. DeGan.	"	3.80	"
6281	2496	Ed. Snyder.	"	4.75	"
6282	2499	Ed. Snyder.	"	3.60	"
6283	2500	A. A. Klopf.	"	4.10	"
7448	2544	J. F. Noonan.	Chanute.....	3.85	"
7449	2545	L. D. Rugg.	"	5.05	"
7450	2546	T. C. Brinegar.	"	3.90	"
7451	2547	Woolley & Bonebrack.	"	3.50	"
7452	2548	C. L. Clayton.	"	3.65	"
7453	2549	Johnson & Spears.	"	3.75	"
7409	2603	Geo. Berkley.	Cherryvale....	4.20	"
7411	2606	W. D. West.	"	4.75	"
7412	2606	C. Holtzman.	"	4.90	"
7313	2476	J. T. Higdon.	Fort Scott....	5.05	"
7314	2477	Ely Reynolda.	"	3.75	"
7315	2478	W. R. Moore.	"	3.65	"
7317	2480	A. Johnson.	"	4.40	"
7318	2481	J. B. Palmer.	"	5.20	"
7320	2483	L. A. Burge.	"	4.40	"
7322	2485	L. A. Burge.	"	4.05	"
7323	2486	Wallace Cowan.	"	4.35	"
7325	2488	A. E. Milburn.	"	4.95	"
7322	2570	C. E. Hunt.	Girard.....	4.15	"
7323	2571	Bert Neet.	"	4.05	"
7325	2573	L. B. Haines.	"	2.90	Illegal.
6300	2585	W. M. Sherley.	Hiawatha.....	5.70	Passed.
6301	2586	Howard Erdley.	"	2.80	Illegal.
6302	2587	Fritz Kerber.	"	4.80	Passed.
7413	2609	Sanitary Ice Cream Company.	Independence..	4.55	"
7415	2611	J. L. Fritz.	"	3.35	"
7416	2612	Ed. K. Owens.	"	4.15	"
7418	2614	W. C. Turpin.	"	3.30	"
7419	2615	M. M. Long.	"	3.70	"
7455	2676	W. H. Enfield.	Ioia.....	3.60	"
7458	2679	J. L. Adamson.	"	5.55	"
7460	2681	R. C. McKinney.	"	3.75	"
7461	2682	W. E. Murphy.	"	4.00	"
7462	2683	M. Fultz.	"	3.60	"
7463	2684	Adamson Bros.	"	3.95	"
6325	2652	C. Wilson.	Kansas City....	2.95	Illegal.
6326	2653	M. Bodley.	"	3.40	Passed.
6327	2654	R. E. Seymour.	"	3.30	"
6328	2655	A. Jones.	"	3.80	"

MILK—CONTINUED.

6339..	2656	T. B. King, grocery (from A. W. Grigsby) ..	Kansas City	2.40	Illegal.
6340..	2657	{ T. B. King, grocery (from Meyer's Sanitary Milk Company) ..	" " ..	3.50	Passed.
6341..	2662	B. Ballard ..	" " ..	2.95	"
6342..	2663	W. S. Ballard ..	" " ..	2.90	"
6343..	2664	Chinery & Booth ..	" " ..	2.95	"
6344..	2665	D. Hankins ..	" " ..	4.15	"
6345..	2666	P. S. Mendenhall ..	" " ..	5.55	"
6346..	2667	J. Engler ..	" " ..	3.25	"
6347..	2668	J. M. Gunther ..	" " ..	5.15	"
6348..	2669	A. Waldner ..	" " ..	2.50	"
6349..	2670	Geo. Sargent ..	" " ..	2.75	"
6350..	2671	J. Edwards ..	" " ..	4.70	"
6351..	2672	W. Ellis ..	" " ..	3.50	"
6352..	2673	{ E. Kempmeier (from DeCoursey Pure Milk Company) ..	" " ..	4.10	"
6353..	2674	G. R. Lots ..	" " ..	4.05	"
6354..	2675	Buck Grocery Company (from Robt. Curran) ..	" " ..	2.95	"
6357..	2686	Sam. McDowell (from F. Roberbach) ..	" " ..	2.95	"
6358..	2686	Frank Roberbach ..	" " ..	2.80	"
6359..	2687	J. R. Zimmerman ..	" " ..	4.00	"
6361..	2689	J. W. Ford ..	" " ..	4.25	"
6362..	2690	T. F. Kennedy ..	" " ..	3.90	"
6363..	2691	{ Muller Bros. Grocery (from Jenkins & Son, Bethel) ..	" " ..	4.65	"
6364..	2692	J. W. Henry ..	" " ..	3.85	"
6255..	2450	W. P. Smith ..	Leavenworth ..	3.90	"
6256..	2451	J. N. Whitman ..	" " ..	4.38	"
6257..	2452	Danzer's Dairy ..	" " ..	3.00	Illegal.
6258..	2453	G. W. Leonard ..	" " ..	4.45	Passed.
6260..	2455	Seitz Bros. Pure Milk Company ..	" " ..	4.00	"
6261..	2456	Joe Battaglia ..	" " ..	5.25	"
6262..	2457	H. L. Rodenburg ..	" " ..	2.50	Illegal.
6263..	2458	H. F. Edgell ..	" " ..	3.22	"
6264..	2459	C. A. Greer ..	" " ..	4.40	Passed.
6265..	2461	Leavenworth Dairy Company ..	" " ..	3.85	Passed.
6269..	2466	B. Warren Dairy Company ..	" " ..	4.40	"
6270..	2466	A. Ryherd ..	" " ..	3.95	"
7423..	2618	W. C. Moore ..	Parsons ..	4.20	"
7424..	2619	W. C. Moore ..	" " ..	3.20	"
7426..	2621	J. H. Mosher ..	" " ..	4.20	"
7428..	2623	R. F. Wilson ..	" " ..	4.15	"
7431..	2625	F. Hornback ..	" " ..	3.95	"
7433..	2623	Geo. Van Horebake ..	" " ..	4.35	"
7434..	2629	Maurice Coffey ..	" " ..	4.65	"
7436..	2630	T. J. O'Connor ..	" " ..	3.90	"
7436..	2631	C. H. Mundy ..	" " ..	4.00	"
7400..	2586	E. Marsh ..	Pittsburg ..	2.75	"
7402..	2588	Joe Hongardy ..	" " ..	4.95	"
7403..	2589	M. H. Radell ..	" " ..	4.80	"
7404..	2590	Henry Ahrens ..	" " ..	3.60	"
7406..	2591	Ed. Snyder ..	" " ..	4.95	"
7372..	2538	W. D. Kennedy ..	Pratt ..	3.90	"
7373..	2539	T. B. Ross ..	" " ..	3.95	"
7374..	2540	Geo. Halsel ..	" " ..	4.15	"
6314..	2544	O. Olson ..	Rosedale ..	2.00	Illegal.
6254..	2449	P. Schmidt, restaurant ..	Seneca ..	3.45	Passed.
7334..	2505	J. P. Green ..	Wichita ..	3.60	"
7335..	2506	Sayers & Clogett ..	" " ..	4.05	"
7336..	2507	F. Blaring ..	" " ..	5.60	"
7337..	2508	R. L. Turner ..	" " ..	4.25	"
7338..	2509	O. L. Chalfan ..	" " ..	5.10	"
7339..	2510	J. N. Jurgens ..	" " ..	3.95	"
7340..	2511	F. M. Shaver ..	" " ..	4.75	"
7342..	2513	J. Leendertse ..	" " ..	4.80	"
7343..	2514	J. Leendertse ..	" " ..	3.55	"
7344..	2515	C. V. Campbell ..	" " ..	4.55	"
7345..	2516	J. N. Jurgens ..	" " ..	4.40	"
7346..	2517	B. W. McGinnis ..	" " ..	3.90	"
7347..	2518	J. N. Jurgens ..	" " ..	4.65	"
7348..	2519	J. N. Jurgens ..	" " ..	4.45	"
7349..	2520	S. B. Campbell ..	" " ..	4.10	"
7350..	2521	F. A. Rowley ..	" " ..	4.45	"
7351..	2522	F. E. Brooks ..	" " ..	4.75	"
7352..	2523	F. F. Whitmore ..	" " ..	4.40	"

MILK—CONCLUDED.

Insp. No....	Serial No....	DEALER.	Place.	Per cent. of fat.	Class.
7353..	2524	E. M. Turley.....	Wichita.....	4.20	Passed.
7355..	2525	J. O. Drollinger.....	.. ..	4.15	..
7356..	2527	L. A. Watson.....	.. ..	4.10	..
7357..	2528	J. P. Boylen.....	.. ..	5.85	..
7358..	2529	J. M. Hayden.....	.. ..	4.40	..
7359..	2530	Sparks Bros.....	.. ..	4.10	..
7361..	2532	O. L. Chalfan.....	.. ..	4.80	..
7362..	2533	W. H. Burche.....	.. ..	4.20	..
7363..	2534	A. W. Hill.....	.. ..	5.15	..

CREAM.

7384..	2558	C. C. Henderson.....	Arkansas City..	15.20	Illegal.
7388..	2562	D. C. Davis.....	.. ..	22.00	Passed.
7454..	2650	Manhattan Hotel.....	Chanute.....	15.40	Illegal.
7410..	2604	Geo. Berkley.....	Cherryvale.....	20.80	Passed.
7316..	2479	W. R. Moore.....	Fort Scott.....	15.40	Illegal.
7319..	2482	J. B. Palmer.....	.. ..	20.00	Passed.
7321..	2484	L. A. Burge.....	.. ..	15.50	Illegal.
7324..	2487	Chas. Sanders.....	.. ..	20.60	Passed.
7394..	2572	Bert Neet.....	Girard.....	16.00	Illegal.
7414..	2610	Sanitary Ice-cream Company.....	Independence..	18.20	Passed.
7417..	2613	Ed. K. Owens.....	.. ..	20.85	..
7420..	2616	M. M. Long.....	.. ..	29.50	..
7456..	2677	W. H. Enfield.....	Iola.....	18.10	..
7459..	2680	J. L. Adamson.....	.. ..	20.00	..
7457..	2678	J. W. Smith.....	.. ..	19.10	..
6267..	2462	Leavenworth Dairy Company.....	Leavenworth..	28.00	..
7425..	2620	W. C. Moore.....	Parsons.....	21.00	..
7427..	2622	J. H. Mosher.....	.. ..	25.80	..
7429..	2624	R. F. Wilson.....	.. ..	17.70	Illegal.
7430..	2625	F. Hornback.....	.. ..	28.65	Passed.
7432..	2627	Geo. Van Horebeke.....	.. ..	21.60	..
7437..	2632	C. H. Mundy.....	.. ..	21.70	..
7401..	2587	A. W. Lane.....	Pittsburg.....	13.65	Illegal.
7405..	2591	Henry Ahrens.....	.. ..	23.00	Passed.
7375..	2541	W. D. Kennedy.....	Pratt.....	18.10	..
7341..	2512	F. M. Shaver.....	Wichita.....	16.90	Illegal.
7354..	2525	J. W. Burnham.....	.. ..	16.45	..
7360..	2531	Sparks Bros.....	.. ..	19.90	Passed.

ICE-CREAM.

6284..	2501	C. V. Jacobs.....	Atchison.....	15.60	Passed.
6285..	2502	Atchison Candy Kitchen.....	.. ..	13.20	Illegal.
6259..	2454	Seitz Bros. Pure Milk Company.....	Leavenworth..	10.00	..
6268..	2464	A. F. Wood.....	.. ..	11.10	..
6271..	2467	John McCool.....	.. ..	13.20	..
6272..	2468	L. B. O'Kane.....	.. ..	12.00	..

The following notes give additional information concerning some of the above samples:

No. 6315 contained 9.3 per cent. of total solids and 6.8 per cent. of solids not fat. The milk gives every indication of having been watered, being low in fat, total solids and solids not fat.

No. 7383. This milk contained 11 per cent. of total solids, the solids not fat thus being 8.9 per cent. The minimum standard of solids not fat being 8.5 per cent. and that of total solids 11.75 per cent., it would seem that this milk had been skimmed.

No. 7395. This milk contained 11.6 per cent. of total solids and

9.3 per cent. of solids not fat. A portion of the cream had undoubtedly been removed.

No. 6301. The total solids in this sample were only 9.58 per cent. and the solids not fat were 6.78 per cent. All of the indications are that the milk was watered.

No. 6257. In this sample the total solids were 12.34 per cent. and the solids not fat 9.34 per cent. The fat is somewhat below the minimum standard and the milk had probably been skimmed to a certain extent.

No. 6262. In this sample the total solids were 10 per cent. and the solids not fat 7.4 per cent. Everything indicates that the milk had been watered.

No. 6263. This milk, though slightly below the minimum standard in respect to fat, is not characterized as illegal because the difference is within the limits of error attending analysis. As the minimum standard of 3.25 per cent. for fat is designed to provide for the exceptional cases of individual cows, any milk from a herd which falls as low as that is properly under suspicion.

No. 6264. This milk, though of excellent quality in respect to fat, contained formaldehyde as a preservative and is illegal for that reason.

No. 6314. In this sample the total solids were only 8.85 per cent., the solids not fat thus being 6.85 per cent. The milk was undoubtedly watered.

No. 6335. This sample contained 10.8 per cent. of total solids and 7.85 per cent. of solids not fat. Being notably below the standard in all respects there seems to be no doubt that it was watered.

No. 6339. Total solids 11.68 per cent.; solids not fat, 9.28 per cent. Apparently a skimmed milk.

No. 6285. The sample of ice-cream contained a dead fly.

MISCELLANEOUS.

No. 6355. Serial No. 2693. Whole wheat flour manufactured by the Purina Mills, St. Louis, Mo. Sold by A. H. Schweinhouse, Kansas City, Kan. Sample was sent in to be examined for buckwheat flour and none was found present. Passed.

No. 6323. Serial No. 2583. Buckwheat flour manufactured by the Wright Pure Buckwheat Company, Berlin, Wis. Sold by G. F. Prentice, Clifton, Kan. This flour shows occasional groups of oat starch, which may be present accidentally rather than as intentional adulteration. Passed.

OYSTERS.

Insp. No....	Serial No....	JOBBER.	DEALER.	Per cent. of solids.	Class.
7879..	2564	{ Port Luraca Fish and Oyster Com- pany, Port Luraca, Tex.....	F. Bowers, Arkansas City.....	12.23	Passed.
7880..	2565	Theo. Goudy, Kansas City, Mo....	E. M. Bird, Arkansas City.....	9.86	Illegal.
7881..	2566	Booth & Co., Kansas City, Mo.....	Turvey & Adams, Ar- kansas City.....	10.24	Passed.
7882..	2567	Jas. Hall, Scotland, Md.....	Jas. Maxley, Arkansas City.....	15.90	"
6825..	2576	W. R. Smith & Co., Topeka, Kan..	C. W. Doleny, Clay Cen- ter.....	10.10	"
6826..	2577	W. H. McGee & Son, Baltimore, Md.	V. Alquist & Son, Clay Center.....	12.96	"
6821..	2574	W. L. Ellis & Co., Baltimore Md...	Tuffley & B. Meat Mar- ket, Clifton.....	15.78	"
6822..	2575	Williams-Foster Co., New York....	Tuffley & B. Meat Mar- ket, Clifton.....	18.94	"
7407..	2598	J. Langrall & Bro., Baltimore, Md.	B. F. Phillips, Fort Scott.....	11.09	"
7408..	2599	{ W. G. Winterbottom & Co., Cam- bridge, Md.....	Franz Bachmann, Fort Scott.....	14.97	"
7890..	2568	W. W. Ballard, Exmore, Va.....	Vincent Bros., Girard ..	15.24	"
7891..	2569	A. Booth, Kansas City, Mo.....	Barry Jones, Girard	12.75	"
7898..	2594	W. H. McGee & Co., Baltimore, Md..	N. A. Kent, Pittsburg..	14.10	"
7899..	2595	Union Oyster Company, Joplin, Mo..	Beck & Hill, Pittsburg..	9.21	Illegal.
7291..	2469	J. C. Leonard, Cambridge, Md.....	Whitlock Bros, Wichita..	14.89	Passed.
7292..	2470	W. H. McGee & Co., Baltimore, Md..	W. H. Kelchner, Wichita,	16.22	"
7298..	2471	{ Chesapeake Fish and Oyster Com- pany, Kansas City, Mo.....	{ Geo. W. Kice, Wichita,	14.54	"
7294..	2472	{ Westerbeke Bros., West Sayville, Long Island, N. Y.....	{ Joe Stewart, Wichita..	15.49	"

No. 6324. Serial No. 2584. Buckwheat flour manufactured by the Berkett Mill, Pennyan, N. Y. Sold by C. W. Doling, Clay Center, Kan. This shows under the microscope a very few grains of oat starch. Passed.

No. 6327. Serial No. 2585. Buckwheat flour sold by V. Alquist & Son, Clay Center, Kan. Jobber, Theo. Poehler Mercantile Company, Lawrence, Kan. Microscopic examination shows nothing but buckwheat starch. Passed.

No. 6329. Serial No. 2596. Buckwheat flour. Brand, Pure Michigan Buckwheat. Manufacturer or jobber, Kimball Cereal Company, Kansas City, Mo. Microscopic examination shows nothing but buckwheat starch. Passed.

No. 5316. Serial No. 2578. Sweet pickles manufactured by Reid-Murdoch Company, Chicago, Ill. Seller, C. W. Myers & Co., Topeka, Kan. These pickles were of a deep green color and were tested for copper. A small amount was detected. Aluminum was also found, indicating the use of alum.

No. 5317. Serial No. 2579. Vinegar manufactured by Otto Kuelne Preserving Company, Topeka, Kan. Retailer, C. W. Myers, Topeka, Kan. Brand, Silver Leaf Cider Vinegar. Contained 6 per cent. of acetic acid. Passed.

No. 2306. Serial No. 2441. Distilled vinegar manufactured by the Monarch Vinegar Company, Kansas City, Mo. Retailer, Davis & Carby, Solomon, Kan. Salesman represented that one-half water could be added. Manufacturer claimed it to be double strength. The vinegar was found to contain 11.7 per cent. of acetic acid. Passed.

No. 7371. Serial No. 2542. Egg-seal. Sold by Reed Produce Company, Pratt, Kan. This is a preservative sold for preserving eggs. It is a slightly colored liquid, having a slight alkaline reaction. Its chemical properties and constituents show it to be a solution of waterglass.

Serial No. 2438. Puritan Flaked Picked-Up Fish. Manufacturer or jobber, New England Fisheries, Brewster, Mass., and 15 Jay street, New York. This fish was said to contain pure sea salt and 0.4 per cent. of benzoate of soda. It was accompanied by instructions for removing the preservative. On treating the fish as directed and testing it for benzoates no reaction was obtained.

No. 7438. Serial No. 2637. Sausage. Seller, Ellidge & Appich, Parsons, Kan. This is their own brand and in its manufacture use is made of Fillerine, manufactured by Brecht B.-S. Co., St. Louis, Mo. Passed as to preservatives.

No. 7439. Serial No. 2638. Sausage manufactured and sold by Van Meter Bros., Parsons, Kan. Bull Meat Brand Flour is used as a filler. A sample of this flour was sent with the sausage. It is a finely bolted meal from corn and contains no soluble salts. Passed as to preservatives.

No. 7440. Serial No. 2640. Fillerine. Manufactured by Brecht B.-S. Co., St. Louis, Mo., and sold by Ellidge & Appich, Parsons, Kan. This was a sample of the filler used in sausage sample No. 7438. It is a white, starchy flour having the taste of corn and showing corn-starch under the microscope. It is free from soluble salts. Passed in respect to deleterious ingredients.

DRUG ANALYSES No. XVII.

By PROFS. L. E. SAYRE and ADOLF ZIEFLE, analysts for State Board of Health.

LAWRENCE, KAN., February 18, 1909.

Report XVII on work done in analysis of preparations as indicated by the various articles subjoined. I desire to call attention to the fact that sweet spirits of nitre, as it is sent to the laboratory, is almost uniformly below standard. Whether this is due to rapid deterioration or not is a question that we are endeavoring to investigate. We have now some experiments under progress that indicate an unavoidable deterioration under the conditions which will hereafter be reported. We cannot urge too strongly the importance of making this preparation fresh, or extemporaneously. The formula of this preparation may be found on pages 413 and 414 of the United States Pharmacopœia. It would seem advisable to suggest to the druggists that they endeavor to make this article for themselves in small quantities, and carefully preserve it in small bottles, protected from the light and air. If it is kept in large containers and these containers frequently opened, exposing the contents to the action of the air, and if the container be of white glass and exposed to the direct rays of the sun, there is little hope of its protection against decomposition. An acid reaction is soon acquired, the other products of decomposition accumulate, and the percentage of ethyl nitrite diminishes.

SPIRITS OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	CITY.	Per cent. camphor....	Per cent. water.....	Remarks.
2432..	1394	A. E. Krokstrom.....	Kansas City.....	4.0	26.1	Adult.
2433..	1395	C. O. Cranston.....	" "	9.0	.....	Passed.
2434..	1396	H. L. McJenkins.....	" "	6.0	.....	Below Std.
2437..	1399	Wm. Wildman.....	" "	12.0	.....	Above Std.
2438..	1400	W. H. Wiles.....	" "	13.0	.....	Above Std.
2440..	1402	F. W. Summers.....	" "	11.0	.....	Sub-Std.
2441..	1403	O. K. Leverich.....	" "	12.0	.....	Above Std.
2442..	1404	E. McLaughlin.....	" "	11.5	.....	Sub-Std.
2445..	1407	H. H. Gregory.....	" "	11.0	12.7	Adult.
2448..	1410	E. R. Cartwell.....	" "	8.0	.....	Below Std.
2449..	1411	Paradowsky & Shwartz.....	" "	11.0	.....	Sub-Std.
2451..	1413	G. W. Scott.....	" "	10.0	.....	Passed.
2452..	1414	Harrison Drug Company.....	" "	9.0	.....	Sub-Std.
2453..	1416	H. F. Lilley.....	" "	6.0	22.6	Adult.
2454..	1417	Wilson & Crossen.....	" "	12.0	.....	Above Std.
2456..	1419	Reeder's Drug Store.....	" "	9.0	.....	Sub-Std.
2459..	1422	C. E. Abraham.....	" "	10.0	.....	Passed.
2461..	1424	F. A. Orr.....	" "	9.0	.....	Sub-Std.
2466..	1429	J. O. Gaskill.....	Argentine.....	5.0	.....	Below Std.

SPIRITS OF CAMPHOR—CONCLUDED.

Lab. No.	Imp. No.	NAME	CITY	Per cent. camphor	Per cent. water	Remarks
2467	1480	Santa Fe Pharmacy	Argentine	9.0		Sub-Std.
2470	1484	C. H. Althoff	Rosedale	12.0		Above Std.
2476	1440	Eureka Drug Store	Kansas City	11.5		Sub-Std.
2481	1445	Ashley-Ball	Melvern	8.0		Below Std.
2485	1449	A. Diebolt	Olpe	13.0	5.8	Above Std.
2496	1464	W. B. Hilton	Cottonwood Falls	12.0		Above Std.
2499	1465	W. C. Simmons	Admire	13.5	4.9	Above Std.
2503	1477	J. J. Hendricks	Dunlap	6.8		Below Std.
2509	1478	W. B. Hunter	Council Grove	6.0		Below Std.
2511	1497	J. F. Isenberger & Son	Natoma	4.5	10.5	Adult.
2514	1481	J. G. McIntyre	Herington	11.2		Sub-Std.
2516	1483	R. P. Pierce	Woodbine	15.5		Above Std.
2519	1487	J. H. Saylor	Ramona	10.0		Passed.
2521	1489	F. M. Shirk	Lost Springs	19.0		Above Std.
2544	1533	Burdick Mercantile Company	Burdick	12.0		Above Std.
2565	1508	O. G. Walker & Co.	Plymouth	12.0		Above Std.
2568	1537	W. Park & Son	Clements	11.0		Sub-Std.
2574	1543	A. M. Cress & Co.	Clements	11.0		Sub-Std.
2577	1546	E. S. Chartier	Hope	9.0		Sub-Std.
2579	1548	J. N. Ketchersid	Hope	13.0		Above Std.
2584	1553	City Drug Store	White City	14.0		Above Std.
2585	1554	J. F. Ferraro	Dwight	11.0		Sub-Std.
2589	1558	Smith Pharmacy	Alta Vista	15.0		Above Std.

NOTE.—Spirits of camphor should contain 10 per cent. of camphor, and no water should be present.

TINCTURE OF IODINE

Lab. No.	Imp. No.	NAME	CITY	Gm. iodine per 100 cc. of tincture	Potassium iodide	Remarks
2436	1396	Wm. Wildman	Kansas City	2.23	+	Below Std.
2443	1405	E. McLaughlin	"	2.73	+	Below Std.
2447	1409	C. H. Brown	"	5.62	+	Below Std.
2455	1413	Wilson & Crossen	"	7.67	+	Above Std.
2460	1422	O. W. Lee	"	5.11	+	Below Std.
2462	1425	C. Lee	"	7.30	+	Above Std.
2464	1427	W	Argentine	4.90	+	Below Std.
2469	1431	Se	"	5.73	+	Below Std.
2471	1435	C.	Springhill	5.62	+	Below Std.
2480	1444	Al	Melvern	3.58	+	Below Std.
2482	1445	Di	"	5.32	+	Below Std.
2491	1455	C.	Madison	5.58	+	Below Std.
2495	1480	J.	Emporia	5.62	+	Passed.
2496	1481	St	Strong City	4.98	+	Below Std.
2497	1483	E.	Cottonwood Falls	5.32	+	Below Std.
2500	1484	A.	Wilsey	5.95	+	Below Std.
2502	1477	C.	"	5.31	+	Below Std.
2505	1474	Di	Bushong	6.10	+	Sub-Std.
2510	1479	A.	Council Grove	5.10	+	Below Std.
2513	1480	Ni	Herington	2.55	+	Below Std.
2517	1484	R.	Woodbine	4.43	+	Below Std.
2518	1485	R.	Durham	5.80	+	Below Std.
2520	1488	Ta	Tampa	6.05	+	Sub-Std.
2522	1490	Gr	Lincolnville	3.48	+	Below Std.
2535	1491	Ba	Herington	4.64	+	Below Std.
2532	1531	L. N. Lawrence	Cedar Point	5.80	+	Passed.
2572	1541	A. M. Cress	Clements	5.63	+	Passed.
2578	1547	E. S. Chartier	Hope	4.07	+	Below Std.
2583	1552	City Drug Store	White City	7.18	+	Above Std.
2587	1556	B. B. Brechbill	Alta Vista	2.27	+	Below Std.
2588	1557	Smith Pharmacy	"	7.52	+	Above Std.

NOTE.—The official tincture of iodine contains 6.86 grammes of iodine and 5 grammes of potassium iodide in 100 cc. The sign plus indicates that potassium iodide is present; the minus sign indicates its absence.

No. 2435, Insp. No. 1397. Phenol. T. H. Wood, Kansas City. The sample contains 78.6 per cent. of phenol. Below standard.

No. 2439, Insp. No. 1401. Whisky. W. H. Wiles, Kansas City. The sample contains 39.33 per cent. of alcohol. Below standard.

No. 2444, Insp. No. 1406. Sweet spirits of nitre. H. H. Gregory, Kansas City. The amount of ethyl nitrite present is too small to measure. Below standard.

No. 2446, Insp. No. 1408. Dilute phosphoric acid. H. H. Gregory. Passed.

No. 2450, Insp. No. 1412. Whisky. G. W. Scott, Kansas City. Sample contained 40.38 per cent. absolute alcohol. Below standard.

No. 2458, Insp. No. 1421. Witch-hazel. C. E. Abrams, Kansas City. Sample contains 13.28 per cent. of alcohol. Below standard.

No. 2463, Insp. No. 1426. Alcohol. Wm. McGeorge, Argentine. Passed.

No. 2465, Insp. No. 1428. Essence of Peppermint. (Original package.) A. J. Rawles, Argentine. The sample was prepared by Faxon & Gallagher, Kansas City, Mo., and contains 7.5 per cent. oil of peppermint. Below standard.

No. 2469, Insp. No. 1433. Bohemian Style Beer. Santa Fe Pharmacy, Argentine, and contains 4.57 per cent. of alcohol. Alcoholic content not stated. Misbranded.

No. 2472, Insp. No. 1436. Extract of Witch-hazel. H. C. Barger, Edwardsville. The sample contains 3.6 per cent. alcohol and an excess of moulds. Sample was below standard and had deteriorated.

No. 2473, Insp. No. 1437. Phenol. 50 per cent. for technical use. Hahn Bros., Munsey. Passed.

No. 2474, Insp. No. 1438. Sweet Oil. Hahn Bros., Munsey. Passed.

No. 2475, Insp. No. 1439. Sweet Spirits of Nitre. Hahn Bros., Munsey. The amount of ethyl nitrite present was too small to measure. Below standard.

No. 2477, Insp. No. 1441. Headache Powders. McLaughlin Pharmacy, Kansas City. Passed.

No. 2478, Insp. No. 1442. Headache Powders (bulk). McLaughlin Pharmacy, Kansas City. Passed.

No. 2483, Insp. No. 1447. Powdered Acetanilid. J. M. Price, Emporia. Passed.

No. 2484, Insp. No. 1448. Tincture of Arnica (Sunburst). Simon Zirkle, Hill Top. Prepared for the Poehler Mercantile Company,

Lawrence. The sample had deteriorated, was quite acid, and contained 3.9 per cent. of alcohol. Below standard and unfit for sale.

No. 2486, Insp. No. 1450. Essence of Peppermint. A. Diebolt, Olpe. Prepared for the Poehler Mercantile Company, Lawrence. The amount of oil present was too small to measure. Below standard.

No. 2487, Insp. No. 1451. Solution of Carbolio Acid (original package). A. Diebolt, Olpe. Prepared for the Poehler Mercantile Company. The sample contains 11.6 per cent. of phenol.

No. 2488, Insp. No. 1432. Dilute Phosphoric Acid. Walter J. Bangs, Madison. Passed.

No. 2490, Insp. No. 1454. Essence of Jamaica Ginger. C. E. de Malorie, Madison. Passed.

No. 2493, Insp. No. 1458. Spirits of Lemon. Wakefield Pharmacy, Emporia. Sample had become terpinated and was unfit for sale.

No. 2501, Insp. No. 1470. Dr. Stedman's Teething Powder. A. W. Cushman, Wilsey. Passed.

No. 2503, Insp. No. 1472. Seidlitz Powders. C. R. Hepler, Wilsey. Passed.

No. 2504, Insp. No. 1473. Hydrogen Peroxide. C. R. Hepler, Wilsey, passed.

No. 2506, Insp. No. 1475. Borax. S. E. Winters, Americus. Passed.

No. 2507, Insp. No. 1476. Spirits of Nitrous Ether (3F) (original package). S. E. Winters, Americus. The sample was prepared by Faxon & Gallagher, Kansas City, Kan. The amount of ethyl nitrite present was too small to measure. Below standard.

No. 2512, Insp. No. 7312. Baldwin Whisky. Sample sent in by Inspector A. G. Pike for the city of Fort Scott. The sample contains 36.21 per cent. of alcohol. Alcoholic content was not stated. Below standard and misbranded.

No. 2515, Insp. No. 1482. Seidlitz Powders. J. G. McIntire, Herington. Passed.

No. 2529, Insp. No. 1498. Hydrogen Peroxide. G. A. Lake, Kansas City. Passed.

No. 2530, Insp. No. 1499. Seidlitz Powders. Rose & Gordon Drug Co., Kansas City. Passed.

No. 2538, Insp. No. 1507. Hydrogen Peroxide. F. G. Summers, Kansas City. Passed.

No. 2544, Insp. No. 1513. Wine of Cocoa, Beef and Iron. H. H. Gregory, Kansas City. The preparation is very old and no trace

of the active principle of cocoa could be found. Sample unfit for sale.

No. 2545, Insp. No. 1514. Elixir Malto Pepsin. H. H. Gregory, Kansas City. The sample contains a great amount of sediment, which is an indication of very marked deterioration. Sample unfit for sale.

No. 2546, Insp. No. 1515. Robinson's Syrup of Hypophosphates. H. H. Gregory, Kansas City. There is an excess of black deposit on the side of bottle and a great amount of precipitate in suspension. Solution was dark-colored and showed signs of marked deterioration. Unfit for sale (deteriorated).

No. 2547, Insp. No. 1516. Ferrated Elixir of Cinchona. H. H. Gregory, Kansas City. Deteriorated.

No. 2550, Insp. No. 1519. Granules Extract of Cannabis Indica. Flagg Pharmacy, Kansas City. The sample is very old, and since this drug is so very unstable, the relative activity of this preparation is unquestionable. Sample too small for assay.

No. 2551, Insp. No. 1520. Dr. Hobson's Cholera Cure. Wyandotte Drug Company, Kansas City. Sample contains alcohol, chloroform and morphine. Misbranded because it is claimed to be a cure for a great many ailments, and it is illegal because the alcohol, chloroform and morphine contents are not stated.

No. 2552, Insp. No. 1521. Abbey's Effervescent Salts. Wyandotte Drug Company, Kansas City. Passed.

[No. 2553, Insp. No. 1522. Purit-All Tablets. Wyandotte Drug Company, Kansas City. Passed.

No. 2554, Insp. No. 1523. Powdered Extract of Nux Vomica. Wyandotte Drug Company, Kansas City. This is an old sample of extract containing 15 per cent. of nux vomica alkaloids. The present official powdered extract should contain only 5 per cent. of nux vomica alkaloids. The sample is very old, as is shown by its pillular consistency; it should be in a powdered form. The sample was offered for sale from the prescription case. Does not conform to the present standard, and is above standard.

No. 2555, Insp. No. 1524. Arseniate of Soda. Wyandotte Drug Company, Kansas City. Passed.

No. 2556, Insp. No. 1525. Tablets of Quinine Bisulphate. Wyandotte Drug Company, Kansas City. These tablets contain an excess of cinchonidine sulphate. Below standard.

No. 2558, Insp. No. 1492. Allen's Restorative Tonic (original package). Beam Drug Company, Herington. The sample is claimed to be a medicinal remedy and to contain gentian, caraway,

cinchona and other drugs. The total solids from 100 cc. were less than that obtained from official whisky. Sample colored with a substance similar to caramel.

No. 2563, Insp. No. 1532. Essence of Peppermint. Burdick Mercantile Company, Burdick. Sample contains less than 1 per cent. of oil. Below standard.

No. 2566, Insp. No. 1535. Essence of Peppermint. O. G. Walter & Company, Plymouth. Sample contains 2.03 per cent. of oil. Below standard.

No. 2569, Insp. No. 1538. Tincture of Arnica. W. Park & Son, Clements. Passed.

No. 2570, Insp. No. 1539. Essence of Peppermint. W. Park, Clements. Amount of oil present in sample was too small; could not be measured. Below standard.

No. 2571, Insp. No. 1540. Essence of Peppermint. W. Parks, Clements. Prepared for the Poehler Mercantile Company, Lawrence. The quantity of oil present could not be measured. Below standard. This sample was also labeled on one side "Solution of Carbolic Acid."

No. 2573, Insp. No. 1542. Paregoric. A. M. Cress & Co., Clements. Passed.

No. 2576, Insp. No. 1545. Sweet Oil. A. M. Cress & Co., Clements. Passed.

No. 2582, Insp. No. 1551. Essence of Peppermint. O'Neill & Co., Elmo. Sample contained less than 1 per cent. of oil. Below standard.

No. 2586, Insp. No. 1555. Sweet Oil. J. W. Cratzer, Volland. Passed.

No. 2590, Insp. No. 1559. Carbolic Acid. Smith Pharmacy, Alta Vista. The sample contained 80.6 per cent. phenol. Below Standard.

Work Done by the State Board of Health in the Chemical Department of the Kansas State Agricultural College.

By J. T. WILLARD, Kansas State Agricultural College.

The Kansas food-and-drugs law, February 14, 1907, provides "that the examination of foods shall be made at the University of Kansas and the Kansas State Agricultural College and such examination shall be under the immediate supervision and direction of the directors of the departments of chemistry." In order that such analytical work may be most satisfactorily, economically and

expeditiously performed, those interested have agreed to a division of the work for the most part. By this arrangement the examinations conducted at the Agricultural College include the following: Dairy products, including butter, cheese, milk, oleomargarin, renovated butter, etc.; ice-cream and frozen custards; meat products, including fresh meats, ham, sausages, salt meats, canned meats, soups, lard, fish, oysters, and other animal foods; cereals, including cereal products, breakfast foods, etc.; flour made from wheat, rye, corn, barley, etc.; bread and bakers' products.

PHYSICAL SCIENCE HALL, AGRICULTURAL COLLEGE.

More or less work has been done upon nearly all of these classes of food products. Very early, even before the enactment of the law, attention was given to the high content of water present in much of the commercial butter and this has received attention ever since. The result is that with the enlightenment of the public and the coöperating activity of the internal revenue department of the United States government there has been a very marked improvement in the quality of butter in this respect.

Another line of investigation undertaken at the special request of the secretary of the State Board of Health was that of the water content properly to be expected in oysters as compared with that actually found in oysters as marketed. The investigation showed that fresh oysters were largely adulterated by soaking them in water and mixing water with them. A standard in respect to water

was adopted as a result of these investigations, and the public testifies with practical unanimity to the great improvement in the oysters now in the market over those previously offered.

Bleached flour early received attention and a method for detecting artificial bleaching was devised that has been universally adopted.

Hundreds of analyses of milk, cream and ice-cream have been made, and a continuous fight waged on watered milk and sub-standard cream and ice-cream. Much yet remains to be done.

Much work has been done in the examination of canned corn, canned salmon and some other canned products. The difficulty of deciding with certainty whether sulfur preservatives have been used or not has received special investigation. Many analyses have been made upon various classes of articles which have not extended to any large number of each kind.

A view is presented herewith of Physical Science hall, a small portion of which is used in carrying out the analyses for the Board of Health. One assistant is employed continuously upon this work, but, owing to a large amount of other work being done in the department, the building is much overcrowded and additional quarters are much needed.

Kansas Anti-Tuberculosis Campaign.

The campaign for the suppression and prevention of tuberculosis in Kansas has been made possible by the legislature passing some important laws, the enforcement of which will do much toward the control and final suppression of this disease.

Senate bill No. 209 is patterned after the New York law, and is believed to meet and anticipate all the scientific and social conditions in the prevention of tuberculosis. It is thought to be the most effective and intelligent legislation ever enacted by any state in the prevention of tuberculosis. The bill follows and should be closely studied by every reader of the Bulletin, especially physicians and health officers.

AN ACT defining the powers and duties of local health officers and boards of health in the matter of the protection of the people of the state of Kansas from the disease known as tuberculosis, and providing penalties for the violation herewith.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. Reports by physicians and others. Tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the

public health. It shall be the duty of every physician in the state of Kansas to report in writing, on a form to be furnished as hereinafter provided, the name, age, sex, color, occupation, place where last employed, if known, and address of every person known by said physician to have tuberculosis, to the county health officer; or in cities of the first class, to the city health officer, in which said person resides, within twenty-four hours after such fact comes to the knowledge of said physician. It shall also be the duty of the chief officer having charge for the time being of any hospital, dispensary, asylum or other similar private or public institution in said state of Kansas to report in like manner the name, age, sex, color, occupation, place where last employed, if known, and previous address of every patient having tuberculosis who comes into his care or under his observation, within twenty-four hours thereafter.

SEC. 2. *Examination of sputum.* It shall be the duty of the bacteriologist of the laboratory of the State Board of Health, when so requested by any physician, or by authorities of any hospital or dispensary, to make, or cause to be made, a microscopical examination of the sputum forwarded to said bacteriologist as that of a person having symptoms of tuberculosis, which shall be forwarded to such officer accompanied by a blank giving name, age, sex, color, occupation, place where last employed, if known, and address of the person whose sputum it is. It shall be the duty of said bacteriologist promptly to make a report of the results of such examination, free of charge, to the physician or person upon whose application the same is made.

SEC. 3. *Protection of records.* It shall be the duty of every health officer of a city or county to cause all reports made in accordance with the provisions of the first section of this act, and also all results of examinations showing the presence of the bacilli of tuberculosis, made in accordance with the provisions of the second section of this act, to be recorded in a register, of which he shall be the custodian. Such register shall not be open to inspection by any person other than the health authorities of the state and of said city or county, and said health authorities shall not permit any such report or record to be divulged so as to disclose the identity of the person to whom it relates, except as may be necessary to carry into effect the provisions of this act.

SEC. 4. *Disinfection of premises.* In case of the vacation of any apartment or premises by the death or removal therefrom of a person having tuberculosis, it shall be the duty of the attending physician, or if there be no such physician, or if such physician be absent, of the owner, lessee, occupant, or other person having charge of the said apartments or premises, to notify the health officer of said city or county of said death or removal within twenty-four hours thereafter, and such apartments or premises so vacated shall not again be occupied until duly disinfected, cleansed or renovated as hereinafter provided.

SEC. 5. *Health officer to direct disinfection, cleansing or renovation.* When notified of the vacation of any apartments or premises as provided in section 4 hereof, the local health officer or one of his assistants or deputies shall within twenty-four hours thereafter visit said apartments or premises, and shall order and direct that, except for purposes of cleansing or disinfection,

tion, no infected article shall be removed therefrom until properly and suitable cleansed or disinfected, and said health officer shall determine the manner in which such apartments or premises shall be disinfected, cleansed or renovated in order that they may be rendered safe and suitable for occupancy. If the health authorities determine that disinfection is sufficient to render them safe and suitable for occupancy, such apartments or premises, together with all infected articles therein, shall immediately be disinfected by the health authorities at public expense, or, if the owner prefers, by the owner at his expense, to the satisfaction of the health authorities. Should the health authorities determine that such apartments or premises are in need of thorough cleansing and renovation, a notice in writing to this effect shall be served upon the owner or agent of said apartments or premises, and said owner or agent shall thereupon proceed to the cleansing or renovating of such apartments or premises in accordance with the instruction of the health authorities, and such cleansing and renovation shall be done at the expense of the said owner or agent.

SEC. 6. *Prohibiting occupancy until order of health officer is complied with.* In case the orders or direction of the local health officer requiring the disinfection, cleansing or renovation of any apartments or premises or any articles therein, as hereinbefore provided, shall not be complied with within forty-eight hours after such orders or directions shall be given, the health officer may cause a placard in words and form substantially as follows to be placed upon the door of the infected apartments or premises: "Tuberculosis is a communicable disease. These apartments have been occupied by a consumptive and may be infected. They must not be occupied until the order of the health officer directing their disinfection or renovation has been complied with. This notice must not be removed under the penalty of the law, except by the health officer or other duly authorized official."

SEC. 7. *Prohibiting carelessness of a person having tuberculosis.* Any person having tuberculosis who shall dispose of his sputum, saliva or other bodily secretion or excretion so as to cause offense or danger to any person or persons occupying the same room or apartment, house, or part of house shall, on complaint of any person or persons subjected to such offense or danger, be deemed guilty of an offense, and any person subjected to such an offense may make complaint in person or writing to the health officer of any city or county where the offense complained of is committed. And it shall be the duty of the local health officer receiving such complaint to investigate, and if it appears that the offense complained of is such as to cause offense or danger to any person occupying the same room, apartment, house or part of house, he shall serve a notice upon the person so complained of, reciting the alleged cause of offense or danger and requiring him to dispose of his sputum, saliva or other bodily secretion or excretion in such a manner as to remove all reasonable cause of offense or danger. Any person failing or refusing to comply with orders or regulations of the local health officer of any city, county or state, requiring him to cease to commit such offense, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not more than ten dollars.

SEC. 8. *Protection of patient's family.* It shall be the duty of a physician attending a patient having tuberculosis to take all proper precautions

and to give proper instructions to provide for the safety of all individuals occupying the same house or apartment, and if no physician be attending such patient this duty shall devolve upon the local health officer, and all duties imposed upon physicians by any sections of this act shall be performed by the local health officer in all cases of tuberculosis not attended by a physician, or when the physician fails to perform the duties herein specified, and shall so report.

SEC. 9. *Providing that physicians shall make a complete statement of procedure and precautions on a blank to be furnished by the health officer.* It shall be the duty of the local health officer to transmit to a physician reporting a case of tuberculosis, as provided in section 1 of this act, a printed statement and report, in a form approved by the secretary of the State Board of Health, naming such procedures and precautions as in the opinion of the said secretary are necessary or desirable to be taken on the premises of a tuberculosis patient. It shall be the duty of the local health authorities to keep on hand an ample supply of such statements and reports and to furnish the same in sufficient numbers to all local physicians. Upon receipt of such statement and report the physician shall either carry into effect all such procedures and precautions as are therein prescribed, and shall thereupon sign and date the same and return it to the local health officer without delay, or, if such attending physician be unwilling or unable to carry into effect the procedures and precautions specified, he shall so state upon this report and immediately return the same to the local health officer, and the duties therein prescribed shall thereupon devolve upon said local health officer, who shall receive the fee hereinafter provided as payment of the services of the physician if he comply with the duties herein prescribed. Upon receipt of this statement and report the local health officer shall carefully examine the same, and if satisfied that the attending physician has taken all necessary and desirable precautions to insure the safety of all persons living in the apartments or premises occupied by the person having tuberculosis, the said local health officer shall issue an order upon the treasurer of the city or county in favor of the attending physician for the sum of one dollar, thereupon to be paid out of the general fund of said city or county. If the precautions taken or instructions given by the attending physician are, in the opinion of the local health officer, not such as will remove all reasonable danger or probability of danger to the persons occupying the said house or apartments or premises, the local health officer shall return to the attending physician the report with a letter specifying the additional precautions or instructions which the health officer shall require him to take or give; and the said attending physician shall immediately take the additional precautions and give the additional instructions specified and shall record and return the same on the original report to the local health officer. It shall further be the duty of the local health officer to transmit to the physician reporting any case of tuberculosis a printed requisition, in a form approved by the secretary of the State Board of Health. Upon this requisition blank shall be named the materials kept on hand by the local health officer for the prevention of the spread of tuberculosis, and it shall be the duty of the local health officer to supply such materials as may be specified in such requisition. Any physician may return a duly signed requisition to the local health officer for such of the specified materials and in such

amount as he may deem necessary to aid him in preventing the spread of the disease, and all local health officers shall honor, as far as possible, a requisition signed by the attending physician in such case. It shall be the duty of every local health officer to transmit to every physician reporting any case of tuberculosis, or to the person reported as suffering from this disease, provided the latter has no attending physician, a circular of information approved by the secretary of the State Board of Health and which shall be provided in sufficient quantity by the local authorities. This circular of information shall inform the consumptive of the best methods of treatment of his disease and of the precautions necessary to avoid transmitting the disease to others. Any physician who shall certify falsely as to any of the precautions taken to prevent the spread of infection shall be deemed guilty of a misdemeanor, and on conviction thereof shall be subject to a fine of not more than fifty dollars.

SEC. 10. *Reporting recovery of patient.* Upon the recovery of any person having tuberculosis, it shall be the duty of the attending physician to make a report of this fact to the local health officer, who shall record the same in the records of his office, and shall relieve said person from further liability to any requirements imposed by this act.

SEC. 11. *Reports of local health officer to State Board of Health.* It is hereby made the duty of the local health officers to return to the State Board of Health, on or before the 10th day of each month, a copy of each report of tuberculosis received and recorded by him during the preceding month.

SEC. 12. *General penalty.* Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished, except as herein otherwise provided, by a fine of not less than five dollars nor more than fifty dollars.

SEC. 13. *Repealing all acts.* All acts and parts of acts in conflict with the provisions of this act are hereby repealed.

SEC. 14. This act shall take effect and be in force from and after its publication in the official statepaper.

A Plea for the Early Recognition of Tuberculosis.

By O. D. WALKER, Salina. Read at the Fifth Annual Conference of County and Municipal Health Officers with the State Board of Health.

In view of the title of this paper, I desire to state three propositions, which I think will be accepted by practically all present.

First. Tuberculosis is preventable.

Second. Tuberculosis is curable.

Third. Tuberculosis is preventable or curable in proportion to the early recognition of probable or positive signs of the disease.

The protection against and suppression of these infective agents is being more eloquently preached in all parts of the world by more medical men, health boards and laymen than any other subject connected with medical science.

Just now there is a great demand for the building of more sanatoria, where this tuberculosis microbe may be isolated. This is all well and good, and by no word of mine would I discourage a liberal expenditure along this line; but to my mind the more vigorous exercise of public-health acts, the placing of a greater burden upon the family physician, and the intelligent education of the public is of vastly more importance if we are to succeed in wiping from the face of the earth this great white plague.

The special fields to be looked after are the unhealthy homes, the overcrowded and ill-ventilated schoolrooms, workshops, and public buildings of all kinds.

What, then, are some of the early signs which would lead us to fear or more positively diagnose tuberculosis?

First, the family history. While direct heredity through sperm or placenta practically never occurs, it seems safe to assume that a predisposition, or, perhaps, better stated, a diminished resistance to tuberculosis is inherited. Children or adults of tubercular parentage should be particularly looked after. Their food and hygiene should be subjects about which the family physician should give more than passing notice. Proper food, in which eggs and milk play an important role, should be advised. An abundance of sunlight and fresh air are necessary articles of diet for us all. These susceptibles must spend much time out of doors, the sleeping-room must be well ventilated at night; in short, every person that is predisposed to tuberculosis should be given a régime which will tend to make the organism more resistant.

If we would combat tuberculosis most successfully we must begin treatment before the unmistakable physical signs of the disease have manifested themselves. It is difficult for many physicians to erase from their minds that old clinical picture of what was conceived to be an early diagnosis of the disease.

We are slow to understand that it is not the presence of the tubercular foci that should be cause for alarm, but the first manifestation of the infection that should demand prompt action.

The mistaken belief that the presence of the tubercle bacillus must be found in the sputum is the cause of many errors of diagnosis, and much valuable time is lost in the institution of proper treatment. Earlier signs than the above or than positive changes discoverable by auscultation or percussion are accelerated pulse; sometimes, but not always, rise in temperature; tired feeling, especially in the afternoon; loss of weight, and frequently some form of cough. It is well known that while the presence of the tubercle

in pure culture in the tissues does not always produce a febrile temperature, it seldom fails to produce an acceleration of the pulse. The record of the pulse, say three times a day, can be kept by the patient or some member of the family and submitted to the doctor every three or four days. In order to get the full significance of the pulse one must know the family tendency; but a pulse which runs above 90 continuously should be looked upon with suspicion unless the rapid pulse can be accounted for in some other way.

While the early development of tuberculosis does not always cause a definite rise of temperature, some modification of the normal range is not nearly so unusual as might be imagined from the superficial examination which physicians too often make. We should understand that the generally accepted average normal temperature of 98.4° is not to be accepted in all cases.

We know there is a diurnal variation in temperature of from 1° to $1\frac{1}{2}^{\circ}$ Fahr.; that an early morning temperature of less than 98° , ranging as low as 97° , is not subnormal, and also that in some individuals the evening temperature may reach $99\frac{1}{2}^{\circ}$. When, however, the daily variation amounts to more than $1\frac{1}{2}^{\circ}$ it should lead us to consider carefully other physical signs and ascertain the cause of the increased range. This is best done by leaving a thermometer with the family and getting the temperature of the patient three or four times a day. Keeping a record for several days in this way, the physician can have useful data upon which to base an opinion. If patients are running a temperature of more than $1\frac{1}{2}^{\circ}$ Fahr. in twenty-four hours there is reason to suspect that some morbid process is at work.

In these suspects, a sign upon which I lay much stress is the loss of weight. Here, as in pulse and temperature, the individual habit must be taken into account. As is well known, it depends upon heredity, racial and family characteristics, and the circumstances of individual occupation. There is, however, a definite normal weight at about which the individual should maintain himself if he is to enjoy good health. In the adult loss of weight generally means some morbid process going on in the body; it also means a lessened resistance. If the loss cannot be explained by some habits of life or some acute febrile or digestive disturbance, and the decline should continue, then a tubercular process should be feared, even though other physical signs cannot be definitely made out. In any event, such means should be adopted as will bring the patient back to his normal weight and resistance.

In children of school age, who are growing rapidly, I know of

nothing which is as valuable an index to good health as a steady gain in weight; and that parents shall know this of a certainty, a biweekly or monthly weighing should be cultivated as a habit, especially in those cases whom we would naturally suspect as below par. A persistent loss of weight for any length of time should be considered a danger-signal, and the child should be made to take more rest, tempted to eat more nutritious foods, and, if the loss continues, take the child out of school. To me a live, healthy child, even with little of that valuable technical knowledge acquired in our schools, is far better than a dead memory of precocity or honor member of her class.

If a patient suffering with a slight though persistent cough has a slight rise in temperature and an increase in the pulse, with some loss of weight, and there are any circumstances in the environment that point to the possibility of tuberculosis contagion, it is only fair to assume that the affection under treatment is tuberculosis, even though there be no bacilli in the sputum, and the physical signs of the lungs may be so slight as to be scarcely more than suspicious.

The earliest possible diagnosis, then, of tuberculosis depends not so much upon any one symptom, nor yet upon a pathognomonic set of physical signs or laboratory tests, but rather upon a study of the actual conditions of the individual patient, taking into consideration the family history, environment, pulse, temperature, cough and weight.

These are observations to which a physician can call to his aid the ordinarily intelligent layman, and in most cases the patient himself.

I would make a plea, then, for broader education and a keener observation along the lines suggested in this paper, and, from my observations, I feel that physicians need these injunctions quite as much as the laymen. To accomplish this means more congresses and symposiums; more state and municipal control through our public health boards; more preaching by physicians and laymen; less drugging and more hygiene; less strain and more play for the child; less indoor and more outdoor life.

In closing this paper I wish to say that the hopeful treatment of tuberculosis absolutely requires the intelligent coöperation and constant assistance of the patient himself. When we have discovered any of the symptoms we have tried to portray, we should take the patient into our confidence and the possibility of being infected with tuberculosis placed before him. This can be done in a tactful way, without alarming the patient, but at the same time showing

him his danger and his responsibilities in the successful treatment; and I have found that young children can be readily trained in the exercise of care regarding their bodily functions. It is only when matters are thus fully explained that we can elicit the coöperation of the patient in the correcting of the habits of life and diet which would tend, if indulged in, toward augmenting rather than diminishing this susceptibility.

The Tragedy of Tuberculosis.

J. Macdonald refers to the family of a crofter who had lived in the same house for twenty-six years. Until the spring of 1906 the whole family, consisting of himself, his wife, five daughters and seven sons, the oldest being twenty-one years and the youngest two, had always been healthy. In April, 1906, the eldest girl, aged twenty-one, who had been in service, came home suffering from a suppurating finger. Symptoms of phthisis manifested themselves, and she died of tuberculous meningitis on May 26. In the following November another daughter, aged fourteen, was found to be suffering from well-marked phthisis in both lungs. Death took place on January 8, 1907. During the time that she was ill the father began to suffer from a cough, and the mother complained of pain in the abdomen and the left ankle. Two daughters, aged respectively twenty and ten, also complained of cough, and the baby, aged two, was anemic and emaciated, and also had a cough. Examination showed that the mother was suffering from tuberculous disease of the ankle and there seemed to be reason to suspect the existence of similar disease in the abdomen, while the two daughters and the baby showed distinct signs of pulmonary phthisis. The baby died on January 3, and the daughter aged ten on January 10, after an illness of about three weeks. The mother was removed to the Western Infirmary, Glasgow. The father, who up to this point was the only one of the male side of the house to be attacked, did not improve. In March, however, it was found that a boy, aged fifteen, was suffering from phthisis. Meanwhile the father got worse and died soon afterwards.

Attention is drawn to the following points of interest in connection with the outbreak: (*a*) The entire absence of a family history or predisposition on either side; (*b*) the fact that for twenty-one years the family had occupied the same croft healthily; (*c*) the fact that the disease attacked the female side of the house first; (*d*) the acute onset of the disease in the majority of the cases; (*e*) the rapid destruction of lung tissue, very high temperatures in some, and the

fact that there was very little expectoration in any of the cases; (f) within three months, father, mother, four sisters, and a brother have all been attacked, with four deaths out of seven cases. The house was of the ordinary type of crofter's dwelling, consisting of two apartments, with stone walls, thatched roof, clay floors, and very damp. The people were particularly clean and tidy, and kept their house in an excellent condition. According to recent information, the mother had died of tuberculous peritonitis in Glasgow. The ravages of the disease have not ended there, and the family is in danger of utter extermination. Its doom recalls the fatefulness of a Greek tragedy.—*British Medical Journal*.

Importance of a Pure Water-supply.

By PROF. E. H. S. BAILEY. Read at the Fifth Annual Conference of County and Municipal Health Officers with the State Board of Health.

This subject, although it may seem to be a hackneyed one, is always new, because new conditions and changes are always arising which demand intelligent action on the part of those who have in charge either municipal or domestic water-supply. If people who are interested and know the facts do not take intelligent action, how can we expect that the people in general will do so.

We shall go so far as to consider plain, raw water as a beverage. This position would seem ridiculous in Bavaria, and probably in Kentucky. The other beverages in ordinary use are something more than liquids to quench thirst. They are either alcoholic, like whisky and beer, or stimulating, like tea and coffee, and finally, nutritious, like milk.

These other beverages are not liable to bacterial contamination, as is water, for the stronger alcoholic liquors are distilled. The wort used in making malt liquor is boiled, and wine is supposed to be simply the juice of the grape, and tea and coffee are boiled in the preparation of the beverage.

Thus milk and water stand alone as liable to bacterial contamination. We know that milk may be dangerous from the disease of the cow, from unsanitary methods of milking, from an unfit place of storage, or from dilution with dirty water or impure ice.

Considering the question of water-supply, what, after all, are the chief sources of danger? We will assume first of all that the primary danger is that the water shall contain what are known as pathogenic germs, or those that are liable to produce disease. How may these find their way into the water?

Considering first a well-water, this is too often near the house

and loosely covered so that surface drainage gets in after a heavy rain. The germs and filth that may be upon the surface are liable to soak into the well and find there a good media for growth.

The well is perhaps under the house. Water from washing the kitchen floor trickles into the well. Perhaps the well is not far from a cow-yard or cesspool. In the spring floods the excess of water trickles through the porous soil into the well.

If the water is high in free ammonia, the chemist looks for recent contamination; if high in nitrates or nitrites, for earlier contamination.

We have recently studied a possible source of supply for the city of St. Mary's. The waters from the wells in the city and east of the city contain large quantities of nitrates. These are regarded as somewhat suspicious. We assumed that the underflow was toward the east, or in a general way down the valley, and so tested the water of the wells on the west side of the town. This water in every case was found to be very much lower in nitrates than were the wells in the central and eastern parts of the city. On this account it was thought best to locate the city wells on the west side of the city. Now, this difference in nitrates may possibly have been due to other causes than the drainage from the city finding its way into the wells, but in the absence of any other evidence we believed that a much safer water could be obtained by drawing it from wells west of the city and above any source of contamination as far as it could be ascertained.

There are some localities in this state where a good soft water, or even a fairly good water, cannot be obtained on account of the geological formation. Here the best thing to do is to put in a water-supply for fire purposes, and then to suggest that rain-water collected from washed metallic or slate roofs in cisterns be used as a source of domestic supply. This water, if collected *with care*—and special emphasis is to be laid upon this expression—will be a safe and palatable water.

River waters are at best liable to produce disease unless carefully filtered through sand filters. We should be liable to a demonstration of this in case there is a serious epidemic of typhoid fever, for instance, in one of the thickly populated towns in the Neosho valley. Here one town pours its sewage into the stream, to be pumped and used for domestic purposes in the next town below. This condition is a menace to public health.

Wells in a river bottom often supply an entirely different water from that of the stream. If the location selected is away from any sources of filth, such as hog-wallows and feed-lots, the water from

these wells in the river bottom may be of excellent quality and entirely wholesome. In some cases the water will be found to contain large quantities of iron, coming from the soil, which is also rich in vegetable matter. This iron may be quite largely removed by a process of aeration and settling after the water is pumped.

The public demand a wholesome water. Usually the specifications for a water-supply contain the proviso that the water shall be good and wholesome. It is, therefore, a function of the officials of the Board of Health to see that these conditions are fulfilled. To get good water frequently costs a considerable amount of money; but since we must take the position, pure water and health, or impure water and disease, the matter of expense should not be considered in trying to solve this problem for any municipality.

For this reason, also, it is perfectly legitimate to vote bonds, as is the custom, for the construction of water-works. This precaution is for the future just as much as for the present, and it is right that those who are to live in the future and enjoy the advantage of pure and wholesome water should help pay for this privilege.

We are often met by the condition that people will continue to use well-water in the thickly populated towns when we believe that the water is not safe. They will do this either because their fathers used the well-water with impunity, or because the city water will cost them something, or for both these reasons.

Unless the wells are so bad that they can be condemned by the health authorities, there is nothing to be done, and the city authorities are not responsible for the spread of any epidemic that may take place on account of the use of well-water of doubtful character.

It is unfortunate that in the past the responsibility of finding and installing a pure water-supply is often left to city officials who have been elected to serve certain interests or for their political faith, and not for their especial fitness for the work of service to the people. With our present water and sewage law it is imperative that these officials shall look to the Board of Health for advice and that they shall follow that advice before their plans are officially approved. This is a great step forward.

Your speaker will refer to one other point only, namely, the mixed character of the evidence as to what constitutes a good and wholesome water. There are three sources to which we must look in any case for information—

First. What is revealed by the chemical analysis?

Second. What is taught by a bacteriological examination?

Third. What information do we get from a study of the locality and the topographical and geological situation?

An opinion must be formed by a consideration of all the data that can be obtained from all these sources, and not from any one source of information. In fact, it is possible to use a score-card for estimating the character of a water-supply, just as well as in dairy practice.

The conditions in each case are so different that it is only by the use of the best judgment, founded on experience in such matters, that it is possible to make use of the best available source of supply.

The Effect of Formaldehyde Upon Digestion and Health.

The United States Department of Agriculture, under date of December 21, 1908, has issued a bulletin setting forth the general results of the investigations made with twelve healthy young men who were fed on milk preserved with formaldehyde.

These investigations showing the effect of formaldehyde upon digestion and health are briefly summarized as follows:

ORGANIZATION AND CONTROL OF THE EXPERIMENT.

The twelve men who became members of the table for testing the effects of formaldehyde on health and digestion were carefully examined before the beginning of the experiment, as in previous cases. The medical history of each man was ascertained; no one being admitted who was not free from organic disease or who had suffered from serious illness of any kind within a year or two, who was predisposed to any hereditary malady, or who exhibited any feebleness of constitution which would make him an easy victim to disease. The usual daily examinations were made of each man, the temperature, pulse and body weight being recorded. When any variation from the normal was noticed, the observation was checked by an attendant, who was always present and supervised the securing of the data for the clinical and medical history, and any symptoms reported were carefully considered to determine how far such disorders might be attributed to the use of the preservative.

GENERAL CONCLUSIONS.

A general study of all the data leads to the conclusion that the admixture of formaldehyde with food is injurious to health, even in the case of healthy young men. It is fair to conclude, therefore, that in the case of infants and children the deleterious effects would be more pronounced. The metabolic functions are disturbed in a notable way, both by the retardation of the nitrogen and sulfur

TEMPUS FUGIT.

You bet he does ;
 Gee whiz
 But he is
 The original aviator—
 Greater
 Than any modern balloonatic ;
 And he does the trick
 So quick
 You never hear the click
 Of his clutch
 Or the swing
 Of his wing
 Or anything.
 That's the way time flies.
 Why, man, do you realize
 That nineteen-nine
 Is sixty days old ?
 Sixty days gone into cold
 Oblivion and the dead past
 Beyond recall
 And all
 That sort of thing ?
 It's a fact.
 The question is not
 Where the days have gone,
 But what have you done
 In them and with them ?
 Sixty days—
 What have you accomplished ?
 I know all about
 What you will do
 Next month,
 Next week,
 Or to-morrow ;
 But how about NOW ?
 That's all the time
 A fellow can be sure of ;
 If you're going to make good,
 Make good NOW.
 Put it over the plate
 While the game's young.
 Get up on your toes
 And buck the line
 Before nineteen-nine
 A day older
 Or the dead past
 Gets colder.
 You see, March
 Follows February,
 And then April comes along,
 And June is here
 And the year
 Is half gone
 Before you know it,
 Grows
 And you'll find yourself
 Waiting for next year.
 That's no way
 To play
 The game of life.
 No, sir.
 Jump in
 To win
 Some how
 Right now.

—*Topeka Daily Capital.*

BULLETIN

OF THE

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No. 3.

MARCH, 1909.

VOL. V.

Try smiling.

Hereditv plays but second fiddle in the causation of tuberculosis.

An excellent spring tonic—the garden-hoe and rake, properly applied.

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COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	0	0	8	0	0	0	40	2
*Miami	0	0	0	0	0	0	1	0	2	0	0	0
Mitchell	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery	0	0	0	0	0	0	0	0	0	0	0	0
Morris	8	1	2	1	9	2	8	0	0	0	12	0
†Morton	1	1	0	0	0	0	0	0	1	0	0	0
Nemaha	1	1	0	0	0	0	0	0	1	0	0	0
*Neosho	0	0	0	0	0	0	0	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	8	0	0	0	0	0
Osage	0	0	1	0	0	0	0	0	1	0	4	0
*Osborne	0	0	0	0	0	0	0	0	0	0	0	0
*Ottawa	0	0	0	0	0	0	8	0	0	0	0	0
Pawnee	0	0	0	0	0	0	0	0	1	0	0	0
Phillips	0	0	0	0	0	0	1	0	4	0	1	0
Pottawatomie	0	0	0	0	0	0	1	0	0	0	10	0
Pratt	1	1	0	0	2	1	4	0	0	0	0	0
*Rawlins	0	0	0	0	8	0	19	1	0	0	12	0
Reno	0	0	0	0	0	0	8	0	0	0	0	0
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
*Riley	0	0	0	0	0	0	0	0	0	0	0	0
Rooks	0	0	0	0	0	0	0	0	0	0	0	0
*Rush	2	2	0	0	0	0	0	0	0	0	0	0
Russell	0	0	0	0	8	0	0	0	6	0	0	0
Saline	0	0	0	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick	2	2	0	0	0	0	1	0	1	0	2	0
Seward	0	0	0	0	0	0	2	0	0	0	2	0
Shawnee	1	1	0	0	8	1	1	0	47	0	0	0
*Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	1	1	1	1	0	0	0	0	7	0	0	0
Smith	1	0	1	0	5	1	0	0	0	0	6	0
Stafford	0	0	0	0	0	0	0	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens	1	1	0	0	1	0	0	0	0	0	1	0
Sumner	0	0	0	0	0	0	6	0	0	0	0	0
Thomas	0	0	0	0	0	0	3	0	0	0	0	0
Trego	0	0	0	0	1	0	2	0	4	0	6	0
Wabaunsee	0	0	1	0	0	0	0	0	0	0	0	0
Wallace	0	0	0	0	2	0	12	3	0	0	0	0
Washington	0	0	0	0	0	0	0	0	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
*Wilson	0	0	0	0	1	0	1	0	0	0	0	0
Woodson	0	0	0	0	1	0	0	0	0	0	0	0
Wyandotta	0	0	0	0	1	0	0	0	0	0	0	0
Cities:												
Atchison	1	1	0	0	2	0	0	0	0	0	0	0
Coffeyville	2	2	0	0	0	0	6	0	0	0	0	0
Fort Scott	3	1	0	0	0	0	0	0	0	0	0	0
Kansas City	19	16	4	3	7	0	4	0	14	0	8	0
Leavenworth	8	2	5	2	4	0	1	0	0	0	2	0
Parsons	6	2	0	0	8	0	4	0	4	0	0	0
Pittsburg	8	1	8	0	4	0	5	0	16	0	2	0
Topeka	7	5	8	2	2	1	4	0	30	0	1	0
*Wichita	0	0	0	0	0	0	0	0	0	0	0	0
State Institutions.	7	0	0	0	0	0	0	0	0	0	0	0

* No report.

† No health officer.

Do you desire to make a *real contribution* to the comfort and welfare of your community? If you do, then see to the removal of the trash pile or manure heap before the flies have an opportunity of breeding their spring family. *Do it now!*

FOOD ANALYSES No. XXII.

By Prof. E. H. S. BAILEY, Chemist for State Board of Health, and Prof. H. L. JACKSON, Food Analyst.

LAWRENCE, KAN., March 20, 1909.

The following report on the material received since the last report, is submitted :

LEMON EXTRACT.

No.	Lemon Oil.		Coal-tar color.
1381.	Three-tenths of 1 per cent.	Illegal.	None.
1529.	" "	"	Yellow.
1549.	" "	"	"
1586.	Nine-tenths	"	None.
1601.	7.6 per cent.	Passed.	
6249.	5.6 "	"	
6250.	5.6 "	"	
6252.	4.0 "	Illegal.	
6296.	5.2 "	Passed.	
6330.	5.2 "	Illegal.	

No. 1381. Label, Good Luck Pure Flavoring Extract of Lemon. Retailer, A. P. Canboy & Son, Stillwell, Kan.; Manufacturer, Dr. J. H. Oyster, Paola, Kan. Purchased by Inspector Tilford September 2, 1908. Lemon oil three-tenths of 1 per cent. Illegal.

No. 1529. Label, Sunburst Extract of Lemon. Retailer, Jas. Glojd, Hymer, Kan.; manufacturer, The Theo. Poehler Mercantile Company, Lawrence and Emporia. Purchased by Inspector Tilford November 10, 1908. Lemon Oil three-tenths of 1 per cent. Colored with coal-tar dye. Illegal.

No. 1549. Label, Nox-Awl Flavoring Extract of Lemon. Retailer, Jas. R. Wilson; Carlton, Kan.; manufacturer, H. D. Lee Mercantile Company, Salina. Purchased by Inspector Tilford November 13, 1908. Lemon oil, three-tenths of 1 per cent. Contains coal-tar dye. New goods. Illegal.

No. 6252. Yale Brand Pure Extract of Lemon. Steinwender-Stoffregen Coffee Company, St. Louis, Mo. Retailer, J. J. Buser, Seneca. Purchased by Inspector Bell October 16, 1908. Lemon oil 4 per cent. Illegal.

No. 6296. Excelsior Flavoring Extract of Lemon. 2 ozs. Full Measure. Manufacturer, E. B. Miller & Co., Chicago; retailer, J. H. Wells, Sabetha. Purchased by Inspector Bell November 14, 1908. The bottle is short measure 1.5 per cent.

No. 6330. 4-Oz. Revolution Extract of Lemon. Manufacturer, W. M. Hoyt Company, Chicago; retailer, Swartz-Linn Mercantile

Company, Soldier. Purchased by Inspector Bell January 13, 1909. Contains $3\frac{1}{2}$ ozs., being short measure 9.3 per cent. Illegal.

VANILLA EXTRACT.

No. 6226. Vanilla Flavor. Label states that it contains vanillin and coumarin and colored with caramel. No vanilla in preparation; is therefore illegal.

MILK.

No. 3251E. Milk. Butter-fat, 4.8 per cent.; cream, 15.5 per cent.; nitrites in serum, none. Passed.

VINEGAR.

No. 7446. Vinegar. Labeled "Distilled Vinegar" by inspector's label. Manufacturer or jobber, J. C. Burgess, Parsons; retailer, Saylor Bros., Parsons. Colorless; acid, 3.36 per cent. Illegal.

No. 7447. Vinegar and Brine from Pickles. Examined for alum, which was not found. Passed.

SYRUP.

No. 7248. Scudder's Full Measure Absolutely Pure Canada Sap Maple and Pure Sugar Cane Blend Syrup. Manufacturer, Scudder Syrup Company, Chicago; retailer, D. L. Cook, Fort Scott. Purchased by Inspector Pike September 29, 1908, Ash, 0.13 of 1 per cent.; dry substance, 66.41 per cent.; sucrose, 52.08 per cent. Sy lead No. .05. Maple flavor slight; maple-syrup color slight; caramel color strong. This syrup contains not to exceed 25 per cent. of maple syrup or maple sugar, and is misbranded, in that its label gives the impression that it is at least one-half maple syrup. Illegal.

No. 7396. Label, Nantucket Brand Maple Flavored Syrup. On sticker, in very small letters, at the bottom, is: "2 per cent. Maple sugar; 73 per cent. corn syrup; 25 per cent. cane syrup." Manufacturer, The Diamond Manufacturing Company, Kansas City, Mo.; retailer, Star & Bursen, Pittsburg, Kan. Purchased by Inspector Pike January 7, 1909. Dry substance, 40.14 per cent.; water, 59.86 per cent.; ash, 0.15 per cent. Caramel color strong; actual flavor is that of glucose; odor and taste of maple absent. This syrup is heavily watered. The words "Maple Syrup and Nantucket" are very prominent and in large-size type on the label; "maple" being most prominent, while the word "flavored" is much smaller, and the legend at the bottom, showing actual composition, is written in very small type. Illegal.

CANNED PINEAPPLES.

No. 10,000. Coolie Brand Singapore Pine Apple Chunks, Finest Quality. Importers, Chas. T. Howe & Co., New York city; jobber, Parkhurst-Davis Mercantile Company, Topeka; retailer, Throop Hotel, Topeka. Secured by Inspector Kleinhans February 8, 1909. The can was badly corroded, badly swelled and contained much gas. The contents of the can were in a state of advanced decomposition and fermentation, soft, mushy and disintegrated and totally unfit for food. Illegal.

No. 10,000. Coolie Singapore Pine Apples Sliced, Finest Quality, in Sugar Syrup. Importers, Chas. T. Howe & Co., New York city; jobber, Parkhurst-Davis Mercantile Company, Topeka; retailer, Throop Hotel. This second can, under same number, containing sliced pineapples, was badly corroded, badly swelled and contained much gas, and the contents of can were decomposed and fermented and totally unfit for food. Illegal.

BEER.

No. 3474. Great American Hop Ale, Carbonated Compound, not liable to tax. Manufacturer, American Beverage Company, Atlanta, Ga. "Possesses the taste and tonic effects of beer without its intoxicating properties." Sample was sent in under suspicion that it was colored with tobacco. No evidence of tobacco extract was found. Alcohol four-tenths of 1 per cent.

No. 3475. Great American Hop Ale Syrup. Manufacturer, American Beverage Company, Atlanta, Ga. This is the syrup which is diluted with water, carbonated by local bottlers and sold under the name Great American Hop Ale, mentioned in No. 3474.

OLIVE OIL.

No.	Refractive index, at 15.5°.	Reaction with—		
		Nitric acid.	Halphen test.	
1327.....	1.4750.....	Dark red.....	Deep red.....	Illegal.
1597.....	1.4711.....	Yellow.....	No reaction.....	Passed.
7247.....	1.4712.....	".....	".....	"
7252.....	1.4715.....	".....	".....	"
7256.....	1.4715.....	Yellowish.....	".....	"
7259.....	1.4714.....	".....	".....	"
7266.....	1.4714.....	".....	".....	"
7281.....	1.4711.....	".....	".....	"
7280.....	1.4714.....	Greenish.....	".....	"
7282.....	1.4713.....	Yellowish.....	".....	"
7283.....	1.4715.....	".....	".....	"
7286 A.....	1.4714.....	Light brown....	Cottonseed-oil....	Illegal.
7299.....	1.4715.....	Yellowish.....	No reaction.....	Passed.
7304.....	1.4715.....	".....	".....	"
7305 A.....	.....	.....	".....	"
7308.....	1.4713.....	Yellowish.....	".....	"

No. 1327. Label, "Salad Oil; So-called Malaga Olive Oil; Yellow." Manufacturer or jobber, Evans-Smith Drug Company, Kansas City, Mo.; retailer, H. M. Bennet, Wilkeville. Purchased by Inspector Tilford, July 29, 1908. "Taken from a broken gallon can." The sample is cottonseed-oil and not olive-oil. Illegal.

No. 7286A. Label, Pure Olive Oil, Best Olive Oil, Gold Medal, Marseilles Exhibition, 1890. Manufacturer, J. B. & A. Artand, Frères, Marseilles, France; retailer, Boston Store, Wichita. Purchased by Inspector Pike, October 21, 1908. Adulterated with cottonseed-oil. New goods. Illegal.

No. 7305A. This is a sample of oil taken from a can of "Sardines in Olive-oil." No reaction for cottonseed-oil was obtained. Passed.

CORN.

No. 6333. Canned Corn. Examined for preservatives and saccharin; none found. Passed.

DRUG ANALYSES No. XVIII.

By Profs. L. E. SAYRE and A. ZIEFLE, Drug Analysts for the State Board of Health.

LAWRENCE, KAN. March 13, 1909.

Dr. S. J. Crumbine, Chief Food and Drug Inspector, Topeka:

DEAR SIR—We send you herewith our eighteenth report of articles examined in the laboratory during the past month.

Permit me to call your attention to a few items of interest in connection with this report.

We have had some complaints that we are reporting the strength of essence of peppermint sold by druggists, and apparently holding them to the standard of official spirits of peppermint. It appears that there is a recognized difference among some dealers between what is known in the trade as essence of peppermint and that which is known by the title of spirits of peppermint. The essence of peppermint, it is claimed, is not an official article, and therefore can be sold of a different strength from that of the spirits. This laboratory would be glad to be instructed by your board as to the ruling on this question: Whether the article sold by wholesale and retail druggists as essence of peppermint shall be held to the standard of spirits of peppermint. The United States and National Dispensatories, which are considered commentaries on the United States Pharmacopœia, refer to essence of peppermint as an English synonym of spirits of peppermint. (United States Dispensatory, p. 1178, 19th ed.; National Dispensatory, p. 1506, 2d ed.)

On page 375 of the United States Pharmacopœia, 1891, will be found the synonym for spirits of peppermint, as follows: "Spiritus Menthæ Piperatæ, Spirits of Peppermint, Essence of Peppermint."

A companion to the United States Pharmacopœia, Oldberg & Wall, 1884, expressly states that in the United States the name of essence of peppermint is applied only to the spirits of peppermint, the English essence not being used in this country, the English essence being 20 per cent. alcoholic strength. If one looks back upon the history of this preparation, from 1820 to the present time, he can find no authority for giving sanction to the idea that an essence is any other than the spirits of peppermint. It should be stated, however, that from 1820 to 1840 the title of Tincture Oleil Menthæ Piperitæ was given to these preparations, and from 1850 to 1870 the strength was one fluid ounce of the oil to fifteen fluid ounces of alcohol. The Pharmacopœia, for the first time, uses essence of peppermint as a synonym in 1840.

This would seem to indicate that our position is correct hitherto, namely, that spirits of peppermint and essence of peppermint are identical preparations.

Circular No. 19 of the United States Department of Agriculture refers to the extract of peppermint as containing 3 per cent. of oil, but it does not give this as a synonym for the essence. It would seem to us that if an alcoholic solution of peppermint were sold as a flavoring extract, and not as a medicinal preparation, we should not hold the preparation as illegal; but, on the other hand, if an extract were to be sold as the medicinal preparation, even if it were labeled extract, we should have to ask instruction whether that preparation should be held to the medicinal standard.

We desire to call your attention also to No. 2767, Solution of Carbolic Acid, the sample here containing 8.2 per cent. of phenol. As phenol is soluble in 19.6 parts of water at ordinary temperatures it would seem that this was a solution containing possibly some glycerin, to contain so much carbolic acid. We are in doubt as to what we should consider as the proper strength of solution of carbolic acid. In the King's American Dispensatory (18th ed., 3d rev.) we find on page 1150 a "solution of carbolic acid," which contains 1 part of the acid to 100 parts of alcohol. According to Pharmacopœial terminology, this should be termed spirit of phenol. There is official a solution in glycerin (Glyceritum phenolis), glycerite of carbolic acid. This contains 20 per cent. of liquefied phenol. Neither of the above preparations furnishes a standard for solution of carbolic acid. It would seem, therefore, very proper that such

a popular poison as carbolic acid, if sold in form of solution, should be carefully guarded, and any such preparation as solution of it should be held to a certain standard. As to what standard would be acceptable to your Board, or whether your Board would care to consider a standard for a solution of this poisonous substance, we would be glad to be informed. At all events, it is our opinion we should require that the strength be stated on the label.

Lab. No. 2489, Insp. No. 1453. Fairchild's Scale Pepsin. W. J. Bangs, Madison. Sample is practically without value. Deteriorated.

Lab. No. 2548, Insp. No. 1517. Cooper's Digestive Compound. Flagg Pharmacy, 1300 N. Fifth street, Kansas City, Kan., C. A. Faulks, proprietor. Deteriorated.

Lab. No. 2549, Insp. No. 1518. Soluble Scale Pepsin. Flagg Pharmacy, 1300 N. Fifth street, Kansas City, Kan. Passed.

Lab. No. 2592, Insp. No. 1561. Temperance Beer. Smith Pharmacy, Alta Vista. Sample was labeled less than five-tenths of one per cent. of alcohol. Contains four-tenths of one per cent. of alcohol. Passed.

Lab. No. 2593, Insp. No. 1562. Tincture of Iodine. A. A. Meyer, Alma. Below standard.

Lab. No. 2597, Insp. No. 1566. Tincture of Iodine. Brown Drug Company, Alma. The sample contains 3.52 gms. of iodine in 100 cc., and no potassium iodide is present. Below standard and not made by U. S. P. process.

Lab. No. 2598, Insp. No. 1567. Elixir of Pepsin. Brown Drug Company, Alma. Sample is practically without value. Deteriorated.

Lab. No. 2600, Insp. No. 1569. Goetz Malt Extract. Brown Drug Company, Alma. Sample is labeled to contain less than 1.9 per cent. of alcohol by volume. It actually contains 1.06 per cent. of alcohol. Passed.

Lab. No. 2601, Insp. No. 1470. Goetz Malt Extract. Brown Drug Company, Alma. Sample is said to contain less than 5 per cent. of alcohol by volume, and contains 4.5 per cent. of alcohol.

It may be stated that these two packages are identical, so far as their containers are concerned. The only difference is that they are labeled differently.

Lab. No. 2604, Insp. No. 1575. Potassium Citrate. Geo. B. Harrop, Manhattan. Sample has absorbed so much moisture that it is in a soft, semiliquid state. It should be a granular powder. Deteriorated.

Lab. No. 2605, Insp. No. 1576. Pure Pepsin Powder. Geo. B. Harrop, Manhattan. The sample is about one-half official strength. Below standard.

Lab. No. 2606, Insp. No. 1577. Oil of Male Fern. Geo. B. Harrop, Manhattan. Deteriorated.

Lab. No. 2607, Insp. No. 1578. Soluble Citrate of Iron and Quinine. Geo. B. Harrop, Manhattan. The sample has assumed a vitreous state, and it should be in the form of a scale. There has been a change in the physical property of the substance, but it has not changed chemically. Passed.

Lab. No. 2608, Insp. No. 1579. Iron by Hydrogen. Geo. B. Harrop, Manhattan. The sample is a very old one and it is oxidized to such an extent that it contains a large excess of ferric oxid. Contains very little reduced iron as such, and is unfit for sale.

Lab. No. 2611, Insp. No. 1582. Tincture of Iodine. Geo. B. Harrop, Manhattan. The sample contains 5.40 gms. of iodine in 100 cc. and no potassium iodide is present. Below standard and is not made by U. S. P. process.

Lab. No. 2612, Insp. No. 1583. Whiskey. Geo. B. Harrop, Manhattan. Passed.

Lab. No. 2613, Insp. No. 1584. Acetanilid Compound Tablets. Geo. B. Harrop, Manhattan. Sample contains caffein, acetanilid and sodium bicarbonate. Sample is illegal because acetanilid content is not stated on label.

Lab. No. 2614, Insp. No. 1585. Tincture of Iodine. H. S. Willard & Co., Manhattan. The sample contains 3.84 gms. of iodine in 100 cc., and no potassium iodide present. Below standard and not made by U. S. P. process.

Lab. No. 2617, Insp. No. 1508. Tincture of Iodine. W. H. Hoover, St. George. The sample contains 4.38 gms. of iodine in 100 cc., and no potassium iodide is present. Below standard and not made by U. S. P. process.

Lab. No. 2619, Insp. No. 1590. Sweet Oil. Wm. Dalton & Sons, St. George. Passed.

Lab. No. 2620, Insp. No. 1591. Tincture of Iodine. G. A. Koler, Manhattan. Passed.

Lab. No. 2623, Insp. No. 1594. Essence of Jamaica Ginger. C. F. Baker, Zeandale. Passed.

Lab. No. 2624, Insp. No. 1595. Sweet Oil. C. F. Baker, Zeandale. Passed.

Lab. No. 2631, Insp. No. 1602. Tincture of Iodine. C. E.

Steadman, Junction City. Sample contains 4 gms. of iodine in 100 cc., and no potassium iodide is present. Below standard and not made by U. S. P. process.

Lab. No. 2633, Insp. No. 1604. Buckwheat Flour. Orris & Brown, Manhattan. Passed.

Lab. No. 2635, Insp. No. 1606. Puritol Tooth Powder. A. A. Meyer, Alma. Passed.

Lab. No. 2636, Insp. No. 1607. Puritol Deodorizing Powder. A. A. Meyer. Passed.

Lab. No. 2638, Insp. No. 1609. Liquid carbolic acid. C. H. Naetman, Paxico. Passed.

Lab. No. 2644, Insp. No. 1615. Whiskey. A. De Donder, St. Marys. Passed.

Lab. No. 2649, Insp. No. 1620. Powdered pepsin. Central Drug Store, St. Marys. Passed.

Lab. No. 2653, Insp. No. 1624. Cu Cura Hair Tonic. R. C. Hulburd, Wamego. Prepared by Cu Cura Co., Tulsa, Okla. Sample is very strongly acid, containing nearly 5 per cent. of acids, principally sulfuric acid. Unfit for sale.

Lab. No. 2664, Insp. No. 1636. Dr. Arthur's Herb & Iron Tonic. Wilson Drug Company, Lecompton. Arthur Chemical Company, St. Louis. The sample contains 11 per cent. of alcohol, but very little medicinal matter. Passed.

Lab. No. 2665, Insp. No. 1637. Dandelion Compound Bitters. Wilson Drug Company, Lecompton. Prepared by the Beggs' Manufacturing Company, Chicago. Sample contains about 30 per cent. of alcohol and very little medicinal substance. Its value as a tonic is questionable.

Lab. No. 2670, Insp. No. 1642. Elixir of Iron, Quinine and Strychnine Phosphate. W. J. Rosser, Carbondale. Deteriorated.

Lab. No. 2671, Insp. No. 1643. Bay Rum. W. J. Rosser, Carbondale. Passed.

Lab. No. 2672, Insp. No. 1644. Brandy. W. J. Rosser, Carbondale. Passed.

Lab. No. 2673, Insp. No. 1645. Whiskey (a blend). W. J. Rosser & Co., Carbondale. Passed.

Lab. No. 2674, Insp. No. 1646. King Korn Whiskey. W. J. Rosser & Co., Carbondale. Passed.

Lab. No. 2676, Insp. No. 1648. Nitroglycerine Tablets. C. S. Pope & Co., Carbondale. The tablets have a favorable appearance, but the sample is too small to analyze. This preparation usually

deteriorates on aging, and the age of these tablets is not known. Their value is questionable.

Lab. No. 2677, Insp. No. 1649. Port Wine. C. S. Pope & Co., Carbondale. Passed.

Lab. No. 2679, Insp. No. 1651. Whiskey. C. S. Pope & Co., Carbondale. Slightly below standard.

Lab. No. 2685, Insp. No. 1657. Hydrogen Peroxide. Chas. E. Snyder, Wakarusa. Passed.

Lab. No. 2691, Insp. No. 1663. Carbolic Acid. M. C. Boyle, Newman. Passed.

Lab. No. 2693, Insp. No. 1665. Carbolic Acid, 95 per cent. Chas. Kleinhans, Grantville. Passed.

Lab. No. 2694, Insp. No. 1666. Tincture of Arnica. Chas. Kleinhans, Grantville. Sample contains 44.9 per cent. of alcohol by volume and is very old goods.

Lab. No. 2697, Insp. No. 1670. Alcohol. Topeka Barber Supply Company, 118 W. Fifth street, Topeka. The sample contains 94.92 per cent. of alcohol by volume. Passed.

Lab. No. 2708, Insp. No. 1680. Whiskey. Doctor Jordan's Drug Store, Wichita. The sample contains 40.72 per cent. alcohol. Below standard.

Lab. No. 2709, Insp. No. 1681. Elixir Bismuth, Pepsin & Pancreatin. Doctor Jordan's Drug Store, Wichita. The sample has practically no digestive power and has deteriorated.

Lab. No. 2711, Insp. No. 1683. Pills of Quinine and Sulphate. Doctor Jordan's Drug Store, Wichita. Passed.

Lab. 2712, Insp. No. 1684. Tablet Triturates of Aloin and Belladonna Compound. Doctor Jordan's Drug Store, Wichita. This sample is not official and the content of belladonna is not given. The tablets were not a very elegant preparation, and their relative value is questionable.

Lab. No. 2714, Insp. No. 1686. Lime Water. Wm. M. Swentzel, Wichita. The sample is practically without value, and contains very little lime in the form that lime occurs in official lime-water. Sample made from lime-water tablets. Below standard.

Lab. No. 2715, Insp. No. 1687. Mrs. Potter's Walnut Juice. Wm. M. Swentzel, Wichita. The preparation is sold in a package containing two bottles, No. 1 containing alcohol and a brown dye, No. 2 containing a chlorin solution. The sample is illegal because the alcoholic content in No. 1 is not stated. The *American Medical Journal* of February 13 published an article describing the ill effects of this preparation. Unfit for sale.

Lab. No. 2716, Insp. No. 1688. Lime Water. Santa Fe Drug Company, Wichita. Passed.

Lab. No. 2719, Insp. No. 1691. Witch Hazel. Santa Fe Drug Company, Wichita. The sample contained 13.27 per cent. of alcohol by volume. Slightly below standard.

Lab. No. 2720, Insp. No. 1692. Panco Pepsin. Geo. R. Basset, 101 Douglas avenue, Wichita. Deteriorated.

Lab. No. 2721, Insp. No. 1693. Whiskey. Geo. R. Basset, 101 Douglas avenue, Wichita. The sample contains 50.1 per cent. of alcohol. Passed.

Lab. No. 2723, Insp. No. 1695. Camphor Monobromate Tablets. Geo. R. Basset, 101 Douglas avenue, Wichita. Passed.

Lab. No. 2724, Insp. No. 1696. Pills of Phosphorus and Nux Vomica. Geo. R. Basset, 101 Douglas avenue, Wichita. Passed.

Lab. No. 2728, Insp. No. 1700. Tincture of Arnica. Geo. H. Mayo, Wichita. Passed.

Lab. No. 2729, Insp. No. 1701. The Diamond Dandruff Compound. Geo. H. Mayo, Wichita. Prepared by the Diamond Dandruff Compound Company, Kansas City, Mo. Passed.

Lab. No. 2733, Insp. No. 1705. Graver's Headache Tablets. Oxley Drug Company, Wichita. The sample is misbranded, because it is claimed to be a sure cure for all forms of headache. The sample contains acetanilid and caffeine. Illegal, because acetanilid is not stated.

Lab. No. 2734, Insp. No. 1706. Lavona De Composeé. Oxley Drug Company, Wichita. Passed.

Lab. No. 2736, Insp. No. 1708. Tincture of Veratrum Viride. Davis Drug Company, Wichita. The container in which the sample was sent does not present a very good appearance, but from the physical point of view the tincture of veratrum was quite favorable. The sample is too small for assay.

Lab. No. 2737, Insp. No. 1709. Whiskey. Davis Drug Company, Wichita. Passed.

Lab. No. 2738, Insp. No. 1710. Essence of Pepsin. Davis Drug Company, Wichita. Passed.

Lab. No. 2739a. Old Lenark Whiskey. Sent in by Dr. S. J. Crumbine. The sample contains 32.7 per cent. of alcohol and was colored with a substance similar to caramel. Below standard. Illegal.

Lab. No. 2740, Insp. No. 1712. Tincture of Capsicum. Lease & Gibbons, Wichita. The sample contains 43.24 per cent. of alcohol. Below standard in alcohol.

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Lab. No. 2743, Insp. No. 1715. Nylas' Hair Tonic. Lease & Gibbons, Wichita. Passed.

Lab. No. 2749, Insp. No. 1722. Whiskey. A. McVicar's Pharmacy, Wichita. Passed.

Lab. No. 2750, Insp. No. 1723. Brandy. A. McVicar's Pharmacy, Wichita. Passed.

Lab. No. 2753, Insp. No. 1726. Bay Rum. Kansas Drug Company, Wichita. Passed.

Lab. No. 2761, Insp. No. 1734. Whiskey. Fred Moore Pharmacy, Wichita. Passed.

Lab. No. 2763, Insp. No. 1736. Tincture of Ginger. C. E. Palmer, Mulvane. Passed.

Lab. No. 2767, Insp. No. 1741. Solution of Carbolic Acid. Geo. R. Sickler, Derby. The sample contains 8.2 per cent. of phenol. No standard.

Lab. No. 2768, Insp. No. 1742. Spirits of Nitre. H. Jones, Derby. Prepared by the Thompson-Taylor Spice Company, Chicago. The sample contained 2.6 per cent. of ethyl nitrite. Below standard.

Lab. No. 2769, Insp. No. 1743. Jerome's Aromatic Essence of Jamaica Ginger. H. Jones, Derby. Passed.

Lab. No. 2770, Insp. No. 1744. Wine of Opium. Olden Drug Store, Wichita. Passed.

Lab. No. 2771, Insp. No. 1745. Tincture of Iodine. Olden Drug Store, Wichita. The sample contains 1.96 gms. of iodine in 100 cc., and no potassium iodide is present. Below standard and not made by U. S. P. process. Illegal.

Lab. No. 2772, Insp. No. 1746. Essence of Pepsin. Olden Drug Store, Wichita. Passed.

Lab. No. 2773, Insp. No. 1747. Tincture of Orange. Olden Drug Store, Wichita. Below standard.

Lab. No. 2775, Insp. No. 1749. Pills of Quinine Sulphate. Olden Drug Store, Wichita. Passed.

Lab. No. 2776, Insp. No. 1750. Pepsin, U. S. P. Olden Drug Store, Wichita. Substandard.

Lab. No. 2778, Insp. No. 1752. Dilute Phosphoric Acid. W. O. Goodin, Wichita. Passed.

Lab. No. 2780, Insp. No. 1754. Syrup of Hypophosphites Compound. W. O. Goodin, Wichita. Sample is very dark in color and has a peculiar odor. Sample too small for assay, but it shows signs of deterioration or an error in its preparation.

ESSENCE OF PEPPERMINT.

Lab. No.	Insp. No.	NAME	City.	Per cent. oil.	Remarks.
2591	1560	Smith Pharmacy.....	Alta Vista.....	2.03	Below standard.
2594	1663	A. A. Meyer.....	Alma.....	2.9	.. ..
2599	1568	Brown Drug Co.....	.....	5.22	.. ..
2602	1573	Eagle Drug Co.....	Manhattan.....	7.83	.. ..
2603	1574	M. McKelvey.....	Wabaunsee.....	8.19	.. ..
2609	1580	Geo. B. Harrop.....	Manhattan.....	11.02	Passed.
2616	1587	H. S. Willard & Co.....	.....	10.00	.. ..
2618	1589	W. H. Hoover.....	St. George.....	15.13	Above standard.
2622	1593	J. Beveridge.....	Keats.....	2.9	Below standard.
2623	1599	Milton Printer.....	Riley.....	11.02	Passed.
2632	1603	C. E. Steadman.....	Junction City.....	6.67	Below standard.
2640	1611	C. F. Payne.....	Maplehill.....	8.37	Substandard.
2643	1614	A. De Donder.....	St. Marys.....	12.42	Above standard.
2646	1617	H. Pessemier.....	.. ..	14.97	.. ..
2648	1619	Central Drug Store.....	.. ..	14.70	.. ..
2651	1622	M. L. Stone.....	Wamego.....	5.40	Below standard.
2654	1625	D. J. Lane.....	St. Marys.....	4.98	.. ..
2659	1630	David Hartzell.....	Rossville.....	4.96	.. ..
2661	1632	Owen Goyetta.....	.....	0.768	.. ..
2663	1634	Fred Hess.....	Perry.....	21.64	Above standard.
2667	1639	Wilson Drug Co.....	Lecompton.....	13.0	.. ..
2681	1653	E. F. Price.....	Burlingame.....	1.0	Below standard.
2683	1660	W. H. Fager.....	Alfred.....	12.15	Above standard.
2703	1675	W. R. Smith.....	Newton.....	8.37	Substandard.
2704	1676	Metropolitan Pharmacy.....	Wichita.....	5.13	Below standard.
2717*	1689	Santa Fe Drug Co.....	.. ..	2.42	.. ..
2722	1694	Geo. R. Basset.....	.. ..	8.25	Substandard.
2726	1698	Geo. H. Mayo.....	.. ..	2.18	Below standard.
2732	1704	Oxley Drug Co.....	.. ..	13.32	Above standard.
2735	1707	Davis Drug Co.....	.. ..	10.49	Passed.
2739	1711	Lease & Gibbons.....	.. ..	10.6	.. ..
2745	1713	Racer Drug Co.....	.. ..	3.52	Below standard.
2747	1720	Gus Saur.....	.. ..	8.96	Substandard.
2748	1721	Archie McVicar.....	.. ..	trace	Illegal.
2751	1724	Higginson's Drug Co.....	.. ..	10.26	Passed.
2752	1725	Kansas Drug Co.....	.. ..	5.40	Below standard.
2754	1727	Means Bros.....	.. ..	12.32	Above standard.
2755	1728	Cookson Drug Co.....	.. ..	8.50	Substandard.
2757	1730	Johnson Drug Store.....	.. ..	7.54	Below standard.
2759	1732	Fred Moore Pharmacy.....	.. ..	9.97	Passed.
2762	1735	Smith Drug Co.....	.. ..	6.06	Below standard.
2791	1765	Clearwater Drug Co.....	.. ..	8.10	Substandard.
2713*	1685	Wm. Swentzell.....	.. ..	2.55	Below standard.

* Essence of peppermint should contain 10 per cent. of oil of peppermint. (See above.)

Lab. No. 2781, Insp. No. 1755. Fluid Extract of Cocoa Leaves. W. O. Goodin, Wichita. Passed.

Lab. No. 2782, Insp. No. 1756. Quinine Sulphate Pills. W. O. Goodin, Wichita. Passed.

Lab. No. 2785, Insp. No. 1759. Fred Dalle's Antiseptic (Cutizene). G. H. Farrick, Wichita. Prepared by Fred Dalle, 344 W. Madison street, Chicago. The preparation is misbranded, because it contains a statement on the label that it is a positive cure for all skin diseases. Sample is a methyl alcoholic solution of a green dye and other substances.

Lab. No. 2786, Insp. No. 1760. Hydrogen Peroxide. G. H. Farrick, Wichita. The sample contains nitrobenzole, or other nitrobenzene compounds, but contains the requisite amount of hydrogen peroxide as such.

SPIRITS OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Per cent. camphor.	Per cent. water.	Remarks.
2596	1565	Brown Drug Co.....	Alma.....	12.5	.....	Above standard.
2610	1581	Geo. B. Harrop	Manhattan.....	11.0	.....	Passed.
2621	1592	J. A. Koller.....	.....	13.5	.....	Above standard.
2627	1598	Milton Printer.....	Riley.....	12.0	.....	.....
2629	1600	C. L. Lewis.....	Manhattan.....	11.0	.....	Passed.
2639	1610	C. F. Payne.....	Maplehill.....	7.0	.....	Below standard.
2642	1613	A. De Donder.....	St. Marys.....	7.0	.....	.....
2645	1616	H. Pessemier.....	.....	9.0	.....	Passed.
2647	1618	Central Drug Store.....	.....	9.0	.....	.....
2650	1621	J. M. Bays.....	Wamego.....	8.0	.....	Substandard.
2652	1623	R. C. Hulburd .....	.....	7.5	.....	Below standard.
2655	1626	D. P. Dudley.....	Silverlake.....	14.0	.....	Above standard.
2656	1627	A. G. Magill.....	.....	14.0	.....	.....
2657	1628	G. H. Ensign.....	Oakland.....	14.0	.....	.....
2658	1629	David Hartzell.....	Rossville.....	13.0	.....	.....
2660	1631	Owen Goyetts .....	.....	11.0	.....	Passed.
2662	1633	Fred Hess	Perry.....	12.0	.....	Above standard.
2663	1640	Wilson Drug Co.....	Lecompton.....	10.0	.....	Passed.
2669	1641	W. J. Rosser & Co.....	Carbondale.....	8.5	.....	Substandard.
2678	1650	C. S. Pope & Co.....	.....	8.5	.....	.....
2683	1655	Irwin Haller.....	Burlingame.....	9.0	.....	Passed.
2684	1656	Chas. Lyons .....	.....	6.5	.....	Below standard.
2687	1659	A. W. Carson.....	Richland.....	14.0	.....	Above standard.
2689	1661	Doran & Doran.....	Twinmound.....	11.0	.....	Passed.
2690	1662	M. C. Boyle.....	Newman.....	11.0	.....	.....
2692	1664	Chas. Kleinhans.....	Grantville.....	8.0	.....	Below standard.
2699	1672	J. B. Dickey.....	Newton.....	8.0	.....	.....
2702	1674	John Reese.....	.....	8.0	.....	.....
2705	1677	Metropolitan Pharmacy,	Wichita.....	9.0	.....	Passed.
2707	1679	Dr. Jordan's Drug Store,	.....	10.0	.....	.....
2718	1690	Santa Fe Drug Co.....	.....	14.0	.....	Above standard.
2725	1697	J. R. Gardiner.....	.....	9.0	.....	Passed.
2727	1699	Geo. H. Mayo.....	.....	10.0	.....	.....
2731	1708	Oxley Drug Co.....	.....	11.0	.....	.....
2741	1718	Lease & Gibbons.....	.....	18.0	.....	Above standard.
2744	1717	Racer Drug Co.....	.....	7.0	.....	Below standard.
2746	1719	Gus Saur.....	.....	9.0	.....	Passed.
2756	1729	Valley Center Drug Co.,	.....	13.0	17.4	Illegal.
2758	1731	H. Goodell	Sedgwick.....	11.0	.....	Passed.
2760	1733	Fred Moore Pharmacy..	Wichita.....	21.0	.....	Above standard.
2764	1737	J. E. Shaw.....	Mulvane.....	7.0	.....	Below standard.
2765	1738	P. R. Kinsey.....	Rose Hill.....	2.5	42.5	Illegal.
2777	1751	O. R. Bissantz.....	Wichita.....	11.0	.....	Passed.
2779	1753	W. O. Goodin.....	.....	8.0	16.6	Adulterated.
2789	1763	H. K. Durkee.....	Viola.....	6.0	.....	Below standard.

NOTE.—Spirits of Camphor should contain 10 per cent. of camphor, and no water should be present.

Lab. No. 2787, Insp. No. 1761. Blue Bell Toilet Water. G. H. Farrick, Wichita. Prepared by the August Kern Barber Supply Company, St. Louis. The sample is composed of a methyl alcoholic solution of aromatic substances. It is very similar to a perfume.

Lab. No. 2790, Insp. No. 1764. Brew Malt. Lon Oyler, Anness. Royal Brewing Company, Kansas City and Weston, Mo. The sample contains 4.56 per cent. of alcohol, and is misbranded because the alcoholic content is not stated.

STATE WATER SURVEY, No. III.

By E. H. S. BAILEY, Ph. D., Chemist.

LAWRENCE, KAN., March 20, 1909.

The water survey laboratory has completed the series of analyses on the Kansas rivers, and the results will be published later.

There are numerous calls for the analysis of city supplies, both present and prospective, and by boards of health for the analysis of private wells. Some of the most important results obtained are presented herewith.

SANITARY ANALYSES OF WATERS.
(Parts per million.)

No.	CITY.	Date. 1908.	Nitrogen in free am- monia.....	Nitrogen in albuminoid ammonia....	Nitrogen in nitrate.....	Nitrogen in nitrite.....	Chlorin.....	Solids.....	Loss on ignition.....	Oxygen con- sumed.....
26	St. Marys.....	10 2	0.216	0.164	15.80	{ strong trace }	15	668	183	....
27	Leavenworth: Schenge well.....	10 31	0.126	1.280	140.00	0.004	65	2,219	839	....
28	Leavenworth: Ken- nedy well.....	10 31	0.184	0.140	35.00	trace	43	1,194	413	....
29	Newton.....	10 31	0.070	0.102	6.00	trace	12	332	110	....
30	Atchison: Pop manu- factory.....	11 14	0.060	0.068	70.00	trace	60	752	410	....
31	Moundridge.....	11 27	0.014	0.020	12.00	{ strong trace }	26	396	164	....
32	Marion: Pop manufac- tory.....	12 11	0.064	0.066	70.00	trace	112	1,355	303	....
33	Sabetha:									
	(a) Light plant.....	12 16	0.086	0.058	4.00	{ slight trace }	16	434	202	....
	(b) R. I. well.....	12 16	0.106	0.108	10.00	trace	12	497	182	....
	(c) Sherwood's.....	12 16	0.074	0.138	56.00	trace	39	686	314	....
	(d) Smith's.....	12 16	0.094	0.162	14.00	trace	13	431	176	....
34	Baldwin.....	12 22	0.082	0.190	70.00	trace	8	370	116	2
		1909.								
35	Havensville.....	1 5	0.062	0.079	10.00	0.000	179	932	496	....
36	Spearville.....	1 29	0.174	0.218	1.00	0.002	14	1,069	246	....
37	Oberlin:									
	(a) Dug well.....	2 13	0.062	0.080	10.00	.....	16	342	171	....
	(b) Drilled well.....	2 13	0.160	0.086	.....	.....	22	443	153	....
38	Caney:									
	(a) Intake.....	2 9	0.072	0.120	1.40	trace	87	466	223	....
	(b) City spigot.....	2 9	0.050	0.103	1.40	trace	86	469	236	....
39	Conway Springs:									
	(a) Spring.....	3 11	0.012	0.060	10.00	trace	16	269	92	4.0
	(b) Well.....	3 11	0.033	0.036	4.00	none	8	114	54	4.0
40	Blue Rapids:									
	(a) At sea-wall.....	3 13	.....	.....	0.35	.....	26	330	.....	.....
	(b) Above dam.....	.....	.....	.....	0.35	.....	36	391	.....	.....
	(c) Well on hill.....	.....	.....	.....	24.00	.....	54	696	.....	.....
41	Ellsworth city.....	3 19	0.095	0.067	none	none	142	853	232	8.4
42	Leavenworth, McCrea- ry's well.....	2 22	0.026	0.153	113.00	0.010	270	2,449	950	1.4

26. St. Marys. — A sample from the test well before the water was running. Free from sediment.
- 27-28. Leavenworth private wells. — These are stated to be in close proximity to vaults and where the ground around is honeycombed with old vaults. The analysis shows No. 27 to be little better than dilute sewage, and No. 28 to be of a suspicious character and probably unsafe.
29. Newton. — A sanitary analysis of the city supply, made at the same time as a mineral analysis. The water appears to be of excellent quality.
30. Atchison. — A water used in the manufacture of pop. The high nitrates suggest that a complete investigation of the surroundings be made.
31. Moundridge. — A proposed municipal supply from a shallow well sunk in the sand.
32. Marion well. — Used for pop manufacture. Not entirely satisfactory.
33. Sabetha. — Samples from proposed sources of city supply. On account of low solids and salt and low sulfates sample (d) seems to be preferable.
34. Baldwin. — Sample showed high nitrates, which might have been due to use of explosive in blasting, as well was new; otherwise good.
35. Havensville. — Sample contains considerable salt and sulfates, but it may not be possible to obtain a water with less mineral matter in this locality.
36. Spearville. — From well 95 feet deep. There are several things shown by the analysis that render the water suspicious. Among these may be mentioned the high albuminoid ammonia, taken in connection with considerable free ammonia, and the amount of nitrites. The location is stated to be not above suspicion of contamination.
37. Oberlin. — (a) From 45-foot dug well, and (b) from four 65-foot drilled wells. In the latter wells it is believed that the upper vein of water is cased off. No surface drainage towards the wells is reported. The water from the drilled wells is of better quality than the other.
38. Caney. — Samples very much alike and indicate a water of fair quality. This analysis does not point to much contamination.
39. Conway Springs. — Samples received per Prof. W. C. Hoad. Taking all together the sample from the well seems to be of better quality for domestic use.
40. Blue Rapids. — These samples were taken for the purpose of tracing the source of a gushing spring of water that comes out in the river. Some have supposed this water came from a well at some distance on elevated ground, and others believe that it is simply river water that has flowed beneath certain strata above the dam, and reappeared below. The analysis shows conclusively that the latter supposition is correct.
41. Ellsworth city supply. — The analysis previously made of this water (August, 1907) showed a large amount of free ammonia. The present analysis shows great improvement in this particular, and taken altogether indicates a good water. The salt in this locality is of course high.

42. Leavenworth.—A private well, In making the analysis, it was noticed that the solids deflagrated; this indicates a large quantity of nitrates, which no doubt came from sewage or cesspool contamination. The nitrites are high, as are the total solids, ammonia and chlorin. From this analysis it is evident that the water is entirely unsafe for domestic use.

Prosecutions Under Food and Drugs Law.

The Kansas food and drugs act became a law on February 14, 1907. Inspectors began the actual work of inspection on April 1, 1907, and thus the law has been in actual operation about two years.

The first year's work was entirely of an educational nature, no attempt being made to bring prosecutions under the provisions of the law, but a patient pointing out to dealers the requirements of the law, and the correction of unsanitary conditions found.

During the past year a number of prosecutions were brought of cases where there seemed to be a wilful neglect or refusal to meet the requirements, and in accordance with regulation 4 a summary of such prosecutions is herewith given :

NOVEMBER 1907.

C. L. Hess, Lawrence, sulfites in meat	\$1 00 and costs.
Chas. Thudium, Lawrence, sulfites in meat.	1 00 "
J. H. Steadman, Chanute, sulfites in meat.	10 00 "

AUGUST, 1908.

J. F. Kerr, Kansas City, substandard milk.	\$1 00 and costs.
C. Roherbach, Kansas City, substandard milk.	1 00 "
H. L. Armentrout, Kansas City, substandard milk	1 00 "
John Scalpens, Kansas City, substandard milk.	4 25
James Garner, Kansas City, substandard milk.	1 00 and costs.
George Frederick, Kansas City, substandard milk.	1 00 "
J. B. Henry, Kansas City, substandard milk.	1 00 "
Chanery & Booth, Kansas City, substandard milk	1 00 "
H. M. Taylor, Quindaro, preservative in meat.	1 00 "
B. A. Jackson, Quindaro, preservative in meat.	1 00 "
P. B. Diltz, Quindaro, preservative in meat.	1 00 "
Chas. F. McGregor, Junction City, obstructing inspection	20 00 "

SEPTEMBER, 1908.

F. D. Coryell, Junction City, meats uncovered in transportation.	\$20 00 and costs.
A. Bishheimer, Junction City, meats uncovered in transportation.	10 00 "
F. Claussen, Merriam, substandard milk.	10 00 "
Berry & Retter, Topeka, sidewalk display.	1 00 "
E. W. Brewster Grocer Co., Leavenworth, sidewalk display.	4 95
Solomon Drug Co., Solomon, no label following display..	20 00 and costs.
Montezuma Hotel, Solomon, no label following display..	20 00 "
Manuel & Chastain, Hutchinson, sidewalk display.	10 00 "
M. G. Thompson, Hutchinson, misbranding cider.	10 00 "
F. H. Drees, Kansas City, sidewalk display.	5 00 "

OCTOBER, 1908.

Owl Restaurant, Olathe, misbranding.....	\$13 50	
G. D. Whitney & Son Drug Co., Olathe, no label following display	13 50	
C. T. Wilcox, Emporia; misbranding.....	5 00	and costs.
A. C. Ireland, Emporia, misbranding	5 00	"
S. T. Wilson, Emporia, misbranding.....	5 00	"
E. A. Wilson, Emporia, misbranding.....	5 00	"
Fred Baird, Emporia, misbranding.....	5 00	"

OCTOBER, 1908—CONTINUED.

J. H. Harvey, Emporia, misbranding	\$5 00	and costs.
W. H. Brooks, Emporia, misbranding.....	5 00	"
H. R. Wickler, Emporia, misbranding	5 00	"
Taylor & Robinson, Kansas City, sidewalk display		
J. T. Romaine, Kansas City, sidewalk display.....		
Jim Marra, Kansas City, sidewalk display		
Star Bottling Company, Salina, saccharine in pop.....	5 00	and costs.
Long & Hines, Cottonwood Falls, selling rotten eggs....	13 50	
Charles Hoffman, Strong City, selling spoiled meat.....	5 00	and costs.
Paola Bottling Works, Paola, saccharine in pop.....		
Winshropp & Hensen, Paola, misbranding		
J. W. Sutton, Glasco, unsanitary slaughter-house.....	5 00	and costs.
J. J. Hendricks, Dunlap, obstructing inspection.....	25 00	"
W. C. Allen, Leavenworth, no label following display...	4 95	
A. F. Wood, Leavenworth, no label following display...	6 95	
Higgins Bros., Leavenworth, no label following display,	6 45	
C. A. Green, Leavenworth, milk adulteration.....	4 95	
J. Shilling, Paxico, selling diseased meat	50 00	and costs.
Sam Shilling, Paxico, selling diseased meat.....	50 00	"
G. F. Shilling, Paxico, selling diseased meat.....	25 00	"

NOVEMBER, 1908.

H. C. Lewis, Arlington, meats uncovered in transportation	\$16 50	and costs.
G. L. Ellsworth, Inman, selling diseased meat.....	27 45	"
H. S. & J. S. Schleifer, Lawrence, meats uncovered in transportation.....	10 00	"
Harry Kennedy, Kansas City, obstructing inspection....		
Clarence Young, Topeka, misbranding drugs.....	50 00	"
F. M. Curtis, Topeka, misbranding drugs.....	25 00	"
J. W. Hollinger, Topeka, misbranding drugs.....	25 00	"
C. L. Tyler, Council Grove, selling diseased meat.....	300 00	"
G. C. Robinson, Topeka, misbranding drugs.....	50 00	"
Robertson & Harvey, Coffeyville, use of preservatives in meat.....	2 00	"
Wm. Wiedemann, Lawrence, selling adulterated candy..	1 00	"
Henry Allendorff, Lawrence, selling adulterated candy..	1 00	"
L. Zuttermeister, Lawrence, selling adulterated candy..	1 00	"
John Coutrekon, Lawrence, selling adulterated candy...	1 00	"
James Limperakis, Lawrence, selling adulterated candy.	1 00	"

DECEMBER, 1908.

A. Ball, Greenleaf, Farmer, selling rotten eggs	\$18 00	
W. R. Moore & Burge, Fort Scott, substandard cream..	2 00	and costs.
C. L. Day, Arcadia, misbranding vinegar.....	13 80	
E. Majors, Arcadia, misbranding malt liquor..	9 55	
Barry Janes, Girard, misbranding.....	9 00	
G. P. Pierce, Topeka, misbranding drugs.....	25 00	
D. R. Osborne, Topeka, deteriorated drugs.....	25 00	
A. H. Ott, Topeka, misbranding drugs.....	5 00	
C. W. Meade, Topeka, misbranding drugs.....	25 00	

JANUARY, 1909.

W. H. Payton, Pittsburg, exposing fresh meat	12 00	
Mould & Son, Pittsburg, exposing fresh meat.....	10 00	and costs.
Damerell & Sons, Erie, diseased animals.....	10 00	"
W. O. Goodin, Wichita, obstructing inspection	10 00	"

FEBRUARY, 1909.

C. W. Wilbur, Cherryvale, misbranded catsup.....	\$1 00	
G. A. Watkins, Cherryvale, exposing fish.	1 00	
J. N. Oyster, Paola, misbranded drugs..	1 00	and costs.

FEBRUARY, 1909—CONTINUED.

W. W. Kirby & R. Lacky, McPherson, selling imitation honey.....	\$20 00	and costs.
— — Herbert, Chanute, misbranded catsup.....	1 00	"
W. F. E. Krause, Iola, misbranded catsup.....	1 00	"
August Kruger, Yates Center, misbranded catsup	1 00	"

MARCH, 1909.

Hawthorne, Coffeyville, unsanitary slaughter-house.....	\$5 00	and costs.
Geo. Harrop, Manhattan, adulterated drugs	3 00	"

New Legislation in the Interest of Public Health.

In addition to the law requiring the report of all cases of tuberculosis to the local department of health, which was published in the last BULLETIN, there were a number of other measures of equal importance that will become laws upon their publication in the statute-book.

TUBERCULOSIS.

Perhaps the most important of all the legislation passed by the 1909 legislature was a small item in the miscellaneous appropriation bill, which provides \$10,000 a year for two years to the State Board of Health for the purpose of inaugurating a state-wide educational campaign for the suppression and prevention of tuberculosis and to carry out the provisions of senate bill No. 209, which is known as the "compulsory notification law." The far-reaching benefits of a two-years "live-wire" educational propaganda cannot be overestimated, for the seed that will be sown will continue to bear fruit all down the coming years.. Who may venture to estimate, therefore, the lives that may be saved to home and society, and the great economic saving to family and to state, which tuberculosis exacts of its victims through the months of suffering and finally death, to say nothing of the broken homes and hearts, the tears and anguish, and the great danger of infection, which is the inevitable accompaniment of each case. Surely, such legislation is of more importance than the San José scale, the public utilities or the bank guaranty, which occupies so much of the attention of the public.

ANTI-SPITTING LAW.

Another cog in the anti-tuberculosis campaign is the anti-spitting bill, which is as follows :

Be it resolved by the Legislature of the State of Kansas :

SECTION 1. That no person shall spit, expectorate or deposit any sputum, saliva, mucus or any form of saliva or sputum upon the floor, stairway or upon any part of any theater, public hall, or building, or upon the floor or any part of any railroad car or street-car, or upon the floor or any part of any car of interurban or suburban railway, or of any other public conveyance in the state of Kansas, or upon any sidewalk abutting on any public street, alley or lane of any town or city in the state of Kansas; and it is hereby made the duty of the owner or lessee of every theater, public hall or building in the state of Kansas to provide every such theater, public hall or building with a sufficient number of spittoons or cuspidors.

SEC. 2. The dry-sweeping of railroad coaches or the cars on any electric or interurban coach, while in transit and containing passengers, is prohibited. Any person or corporation violating this section will, upon conviction, be guilty of a misdemeanor and be fined a sum not exceeding one hundred dollars.

SEC. 3. It is further provided that every railroad company shall provide in each smoking compartment or smoking-car, when so requested, as many cuspidors or spittoons as may be necessary for the convenience of passengers. In so far as this act relates to the public health, power is given to the State Board of Health to enforce the same.

SEC. 4. Any person violating any provision of this law, shall upon conviction, be fined in a sum not less than one nor more than five dollars, and in default of payment be imprisoned in the city or county jail for not more than five days.

SEC. 5. It is further provided that printed copies of this act shall be posted conspicuously in all public places, buildings, theaters, railway and street-cars.

SEC. 6. This act shall be in force and effect from and after its publication in the statute-book.

It will be noticed that the abominable and disgusting practice of the dry-sweeping of railroad-coaches while in transit is to be prohibited, and the traveling public be protected from the annoyance and danger of having a cloud of filthy dust raised about their heads, or to be obliged to wade through a mire of spit which is so often found in the smoking-cars. It must be said that railroad companies are only responsible for the latter condition to the extent of their failure to provide cuspidors for these cars, but the principal blame must attach to the human hog who has little regard for his fellow traveler, and less manners.

BARBER SHOPS.

The State Board of Health is now charged with the sanitary supervision of barber shops and bath-houses, and who will say this is not a wise law. It is believed that the large majority of the barber shops in the state are reasonably clean, and that due regard is taken in the prevention of the spread of disease, but we are also convinced there are others that do not come up to this standard. The law follows :

Be it enacted by the Legislature of the State of Kansas :

SECTION 1. That in the interest of the public health and to prevent the spread of contagious and infectious diseases, the State Board of Health is charged with the sanitary supervision of all barber shops, barber schools, public bath-houses and public bath-rooms in the state.

SEC. 2. That the State Board of Health is hereby directed and empowered to inspect, or cause to be inspected, the places mentioned in section 1 of this act, and to make such rules and regulations as are necessary to safeguard the public health and to prevent the spread of contagious or infectious diseases, which rules and regulations shall be published in the official state paper, and any person violating any such rules or regulations, when made and published in the official state paper, shall be guilty of a misdemeanor, and upon conviction shall be fined a sum not to exceed fifty dollars or less than five dollars.

SEC. 3. This act shall be in force and effect from and after its publication in the statute-book.

The regulations will require that each customer be served with a clean towel; that recent syphilitics be barred from serving or being served in a barber shop; that those suffering from gonorrhœa be excluded from the public bath-house, and that modern ways and means of disinfection be established and maintained.

COUNTY HEALTH OFFICERS.

The general health laws were amended in a way to make the county health officer one of more importance and at the same time make him accountable for the failure to perform duty. It is to be hoped that the Board may not be called upon to exercise the authority conferred in this law. The text follows:

AN ACT relating to county health officers, amending section 8 of chapter 129 of the Laws of 1885.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. That section 8 of chapter 129 of the Laws of 1885 be amended to read as follows: That the county health officer in each county and the health officer of each local board of health throughout the state immediately after his election shall take the same oath of office prescribed by law for county officers, and shall give a bond of five hundred dollars, condi-

tioned for the faithful performance of his duty, to keep an accurate record of all of the transactions of his office, and to turn over to his successor in office, or to the county or local board of health selecting him, on the expiration of his term of office, all records, documents and other articles belonging to the office, and to faithfully account to said board and to the county and state for all moneys coming into his hands by virtue of his office. And he shall further notify the State Board of Health of the fact of his election and qualification as herein provided for, and give his post-office address. He shall receive and distribute without delay in the county for which he is appointed all forms from the State Board of Health to the rightful persons, all returns from physicians, assessors and local boards to the said State Board of Health, and shall keep an accurate record of all of the transactions of his office and shall turn over all records and documents kept by him as herein provided, and all other articles belonging to the office, to his successor in office or to the county or local board electing him, on the expiration of his term of office, and shall perform such other duties as this act, his local board or the State Board of Health may require of him. He shall receive for his services such reasonable compensation as his board may allow, to be paid out of the county treasury, and for any failure or neglect of said health officer to perform any of the duties prescribed in this act he may be removed from office by the State Board of Health as well as in the manner prescribed by section 7 of chapter 129 of the Laws of 1885. And in addition to removal from office as provided herein, for any failure or neglect to perform any of the duties prescribed by this act, said county or local health officer shall upon conviction be fined not less than ten nor more than one hundred dollars for each and every offense.

SEC. 2. That original section 8 of chapter 129 of the Session Laws of 1885 be and the same is hereby repealed.

SEC. 3. This act shall take effect and be in force from and after its publication in the statute-book.

FOODS AND DRUGS.

The food and drugs law was amended in several important particulars, viz.: Section 3 was amended so as not to tie the hands of the department to only such rules as were promulgated by the United States Department of Agriculture, which was the case under the old law. The Board is now authorized to make and publish standards of purity, quality and strength for foods, and is provided with two additional inspectors and an assistant to the chief food and drug inspector. Inspectors hereafter will be required to pass an examination of a board of examiners composed of the food and drug analysts for the Board and the chief food and drug inspector, thus placing inspectors under civil service, with a graduated salary of \$100 per month the first year, \$110 the second year, and \$125 the third and thereafter.

Inasmuch as the food and drugs law does not seem to cover the sanitary conditions of places and things where foods and drugs

are produced or sold, the legislature passed a measure designed to cover that defect, as follows:

AN ACT relating to the public health, authorizing and empowering the State Board of Health to make and publish sanitary rules and regulations, and providing penalties for their violation.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. That every place occupied or used for the preparation for sale, manufacture, packing, storage, sale or distribution of any food or drug shall be properly lighted, drained, plumbed, ventilated, screened, and conducted with strict regard to the influence of such condition upon the health of operatives, employees, clerks or other persons therein employed, and the purity and wholesomeness of the foods or drugs therein produced.

SEC. 2. That the State Board of Health is hereby authorized and directed to make and cause to be published in the official state paper such sanitary rules and regulations as are necessary in food and drug inspection and to carry out the provisions of this act, and any person or persons violating the provisions of this act, or any of the rules and regulations made or published under the provisions of this act, shall upon conviction be fined in a sum not exceeding one hundred dollars.

SEC. 3. This act shall be in force and effect on and after its publication in the official state paper.

By this law there will no longer be any question of the Board's authority to regulate sidewalk displays, bake-shops, meat-markets, etc. Particular attention is called to the fact that all the places are required by the act to be screened. *That means the local slaughter-houses*, as well as the grocery stores. County health officers should get busy.

DISEASED ANIMALS FOR FOOD.

One can scarcely believe that there are those who will deliberately sell for food the meat from a diseased animal, yet during the past year the department has brought a number of successful prosecutions for this grave offense. The new law provides it is a misdemeanor for any one to *purchase*, trade or exchange a diseased animal for the purpose of disposing of the same for food. Thus the seller and the purchaser are both liable. The maximum penalty should be invoked on these men, who like the two who some time ago sold part of the carcass of a steer that presumably died of pneumonia. The department solicits information concerning any violation of this law, which is as follows:

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. Any person or persons who shall kill, sell or trade or exchange, or offer to sell, trade or exchange, for human consumption, any diseased animal or animals, knowing them to be diseased, shall be guilty of

a misdemeanor; provided, that this act shall not apply to animals sold for immediate slaughter under state or federal inspection.

SEC. 2. Any person or persons who shall purchase or get by trade or exchange, or in any other way come in possession of any diseased animal or animals, knowing the same to be diseased, for the purpose and with the intent of disposing of the same for food, except for immediate slaughter under state or federal inspection, shall be guilty of a misdemeanor.

SEC. 3. Every person found guilty of violating any of the provisions of this act shall be fined in any sum not less than fifty dollars nor more than five hundred dollars, or by imprisonment in the county jail for a period not exceeding six months, or by both such fine and imprisonment.

SEC. 4. This act shall take effect and be in force from and after its publication in the official state paper.

WATER AND SEWERAGE.

The duties and authority of the Board have been greatly extended in the amendments to the water and sewerage law. Under the new provisions all water plants and sewerage systems, both old and new, are under the sanitary control of the Board.

Whenever complaint shall be made to the State Board of Health by the mayor of any city of the state, or by a county health officer, or by a local board of health, touching the sanitary quality of any water supplied to the public for domestic or drinking purposes within the county within which the said city or health officer or local board of health is located, it shall be the duty of the State Board of Health to investigate the character of the water-supply concerning which the complaint is made. Also, whenever the State Board of Health shall have reason to believe that the sanitary quality of any water supplied to the public within the state for domestic or drinking purposes is such as to be prejudicial to the public health, it may upon its own motion investigate the character of such water-supply.

There are several cities in the state whose water-supply will not bear a very close inspection, from all of which you are entitled to draw your own conclusion.

HOTEL INSPECTION.

The Copeland Hotel catastrophe insured the passage of the hotel inspection bill that had already been prepared and indorsed by the United Commercial Travelers and the State Board of Health. The law provides that halls shall extend from one outside wall to the opposite wall; for steel fire-escapes — at least two on each building, and for a rope or similar fire-escape device in each room; for chemical fire-extinguishers; red lights and notices at places of exit,

and air-tight elevator shafts. Clean sheets and clean bedding must be provided for each guest, and the entire hotel kept in a clean and sanitary condition, properly screened and free from insects. The kitchen and ice-boxes come in for special mention, and any one violating the Board's sanitary rules is subject to a stiff fine. The State Board of Health, local health officers and fire marshals are charged with the enforcement of the law.

The Common Drinking-cup.

"The common drinking-cup must go," says *Good Housekeeping* for February. And when the reader discovers the dangers that linger around the edge of the tin dipper, the kind that he used to use in school and the kind that perhaps still hangs near the kitchen pump at home, he begins to wonder how he has lived through it all. For he finds that Professor Davison, of Lafayette College, "requested ten boys to apply the upper lip to pieces of flat, clean glass in the same way as they would touch a cup in drinking. These glass slips were then given a thorough microscopic examination, and they showed an average of about 100 human cells or minute bits of skin and 75,000 bacteria to each slip. This from one application to the lip.

"Going a step further, Professor Davison took a thin drinking-glass, which for nine days had been in common use in the school. By counting the cells present on fifty different areas on the glass he estimated that the cup contained over 20,000 cells or bits of dead skin. Few of these showed less than 10 germs clinging to them, and many as high as 150, while between the cells were thousands of germs left by the smears of saliva deposited by the drinkers.

"A cup which had been used in a high school for several months without being washed was lined inside with a brownish deposit. Under the microscope this proved to be composed of particles of mud, thousands of bits of dead skin and millions of bacteria, among which were scores of germs corresponding in all details to those of tuberculosis. Some of this sediment was injected under the skin of a healthy guinea-pig, and in forty hours the animal died. A *post-mortem* examination revealed that death was due to the presence of a sufficient number of pneumonia germs to cause blood-poisoning.

"A second guinea-pig inoculated with the cup sediment developed tuberculosis. Careful inquiry proved that several pupils in this

school from which the cup was taken were then sufferers from this dread disease."

The evil is not to be dealt with lightly, says the author, particularly where hundreds of school children use the same cup. Sanitary drinking fountains and individual cups are suggested by *Good Housekeeping* to take the place of the old-fashioned germ-lined dipper.

Bacteria Found on Public Drinking-cups.

By M. A. BARBER, Clinical Laboratory of the University of Kansas, Rosedale. Special Investigation for the State Board of Health.

[NOTE BY THE EDITOR.—The report of Professor Barber, which follows, is both timely and interesting, as well as confirmatory of the findings of Rosenau, Kenyon and others, who have made investigations along the same line. The State Board of Health is contemplating the issuance of an order to abolish the common drinking-cup on all railroad trains and at railroad stations and in public schools of the state, and the secretary will so recommend in his report to the Board at the quarterly meeting to be held on March 30 and 31. Sanitarians are unanimously agreed that one of the most fruitful sources of the spread of infectious disease is that of the common drinking-cup that may and often does have recent fresh and virulent germs, to be inoculated directly into the mouth of the unfortunate victim. Down with the common drinking-cup!]

In presenting this report, the writer does not pretend that the results given below, covering as they do but a few experiments in a limited locality, can do more than to partially confirm the more ample observations of others. However, in view of the movement now inaugurated by the State Board of Health of Kansas against the use of public drinking-cups, and in view of the fact that the following experiments were done in localities frequented by the people of this state, the results here given may have sufficient timely and local value to warrant their publication.

To obtain samples, swabs, such as are in use for throat examinations, were placed inside plugged test-tubes, sterilized in the autoclave, and carried to the public drinking-places. With the swabs the edges of the cups were thoroughly rubbed, and the swabs replaced in the test-tubes, where they were kept moist and free from further contamination. Within about half an hour or less these swabs were carefully rubbed on the surface of solidified Loeffler's blood serum and the serum tubes incubated at 37 degrees for about twenty-four hours. The tubes were placed in the incubator within about an hour or less after the taking of the samples. Controls were in two cases made from the water alone taken from the source of the public drinking water.

After incubation the colonies of bacteria on the surface of the blood serum were examined microscopically, stained by the Gram method. Isolated colonies from the several tubes were examined

separately, and also a smear including many colonies from different parts of the surface of the serum.

Cups in several different localities were examined. Two visits were made to a large railway station, one to a large office building, one to a railway coach and one to a ward school, the last within a quarter of an hour after the dismissal of the pupils. In all but the office building two or more cups were examined at each visit. Altogether, material from eight swabs was examined. In the railway station care was taken in a part of the samples to take cups immediately after their use by three or more persons. The cups in the railway station and in the office building were of porcelain, in the other localities of metal.

RESULTS.

Of four tubes taken in the railway station, staphylococcus was found in three; streptococcus in one; diplococci, one of which corresponded morphologically to the diplococcus of pneumonia, in two; bacilli in all. These bacilli included about four different sorts, none of which resembled the diphtheria bacillus.

Of the two tubes taken from cups in the ward school, staphylococcus was found in both; streptococcus in one; and bacilli, largely of two sorts, in both. In the tube taken from the office building streptococci and various bacilli were found.

Of two cultures made from tap water alone, one, taken at the railway station, showed no growth, and the other, taken from the same source as that of the ward school water, showed two sorts of bacilli, only one of which was found on the drinking-cup cultures and then in small numbers. No cocci of any sort were found. The failure to obtain growth from the station sample of tap water is due probably to the small quantity of water used and to the conditions of growth, which were unfavorable to most water bacteria, rather than to the purity of the water.

It is understood that the identification of the forms named above is based only on their appearance under the microscope. It is probable that the isolation and further cultivation of all the sorts which grew would increase rather than diminish the list of varieties. Of the staphylococcus, for example, a variety in morphology among the colonies indicated the presence of more than one sort, though most of the colonies had the appearance of the ordinary *Staphylococcus albus* or *aureus*. Tests made in midsummer, when the cups are more frequently used, would probably show greater numbers and variety.

A test of pathogenicity was made in only one case, that of the sample in which the suspected pneumococcus was found. Half of a cubic centimeter of a thick emulsion in salt solution was inoculated into the peritoneum of a large rabbit. No septicæmia followed, and it is probable that the organisms were of low virulence.

In summarizing, one may conclude that the greater number of colonies found grew from bacteria coming from the mouths of the users of the cups rather than from the water. This is evident not only from the results of the controls, but from the nature of the colonies found, most of which were rather of the mouth variety than of water forms. While it is not definitely proved that the bacteria found in these experiments are necessarily pathogenic to man, it is evident that what takes place with the ordinary bacteria of the mouth may take place with diphtheria organisms, pneumococci or pus cocci in a virulent condition; and that the drinking-cup offers a ready means of transferring such organisms from the mouth of one person to that of another. The danger of infection is the greater since the bacteria are transferred in the moist condition and since a very short time may elapse between the use of a cup by an infected person and by one who is in a susceptible condition.

Disinfect the New Home.

From Iowa Health Bulletin.

State Health Commissioner Dixon, of Pennsylvania, gives some timely advice to people who are about to move into a new home. He advises them that, before occupying a house from which another family has moved away, all the rooms should be thoroughly fumigated and disinfected. The commissioner adds:

"This is the season of the year when, on all sides, we see people moving from one home to another. The householder decides to change his residence, and rents a house from which another family is just moving. Of course, floors are scrubbed, cellars are cleared of the rubbish left by the tenant, back yards are cleaned up, and we take it for granted that the housekeeper of the incoming family works to make the new home at the very beginning clean and neat.

"The cleaning I have mentioned, however, is not sufficient. Soap and water are splendid things, but, unfortunately, they will not kill germs of disease that may lurk in the new home, and bring the hearse to the door soon after the moving van has driven away.

"How do you know that there has not been a consumptive living in the house into which you are moving? The afflicted one may have been in a mild stage of the disease, but, nevertheless, he may have left behind the germs that will result in infecting one of your

family with this disease, which every year carries off so many thousands of people in Pennsylvania.

"I am convinced that hundreds and hundreds of cases of tuberculosis and other infectious and contagious diseases could be avoided every day by the precaution of proper disinfection. We are all anxious to do everything possible for the health of our children, but too often we fail to take some simple precaution, and disease stalks in through the bars that we have left down."

Fishing.

A youth beside the water sits,
The noonday sun is warmly beaming;
His nose and neck are turkey red,
His eye with radiant hope is gleaming.
He watches close the bobbing cork
Advance upon the tiny billows;
A jerk, a swish, and high above
He lands a sucker in the willows.
That's fishing.

A fair maid trips the tennis-court,
A dozen eyes admire her going;
Her black-and-yellow hat-band burns
A hole right through the sunset's glowing;
She drives the ball across the net
And into hearts consumed with wishing;
She drives a dart from Cupid's bow,
She'll land a sucker, too.
She's fishing.

My little wife beside me stands
And steals a dimpled arm around me,
A kiss upon my lips—that's bait—
Some information to astound me;
Her bonnet is quite out of style,
Her summer wrap quite past the using.
That lovely one—so cheap at Brown's—
Is just the one she would be choosing.
That's fishing.

So, whether the game be fish or men,
The bait be kisses, worms or blushes,
The place at home, by sunny pool,
Or tennis-ground at evening's blushes,
'Tis the old game the serpent played
With Mother Eve in Eden's bowers,
And Adam's sons and daughters all
Will love the sport to time's last hours.
That's fishing.

—ASIAN-ENGLISH "Fishing Gazette."

THE TRUE LENT.

Is this a fast—to keep
The larder lean
And clean
From fat of beeves and sheep?

Is it to quit the dish
Of flesh, yet still
To fill
The platter high with fish?

Is it to quit the dish
Or ragged go,
Or show
A downcast look, or sour?

No! 'Tis a fast to dole
The sheaf of wheat
And meat
Unto the hungry soul.

It is to fast from strife,
From old debate
And hate—
To circumsise thy life.

To show a heart grief-rent;
To starve thy sin—
Not bin;
And that's to keep thy Lent!

—Robert Herrick (1647.)

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No. 4.

APRIL, 1909.

VOL. V.

FLY BULLETIN.

Are you doing anything to make the world better for your having lived in it?

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VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

Allen	2	2	0	0	0	0	2	0	4	0	0	0
Anderson	0	0	0	0	0	0	2	0	0	0	0	0
Atchison	0	0	0	0	1	0	0	0	9	0	0	0
† Barber	1	0	0	0	0	0	2	0	0	0	1	0
Barton	7	7	0	0	0	0	0	0	0	0	0	0
Bourbon	0	0	0	0	0	0	0	0	0	0	0	0
Brown	0	0	0	0	0	0	0	0	0	0	0	0
Butler	0	0	0	0	1	0	2	0	0	0	2	2
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauque	0	0	0	0	0	0	0	0	10	0	0	0
Cherokee	4	4	0	0	1	0	4	1	5	0	2	0
Cheyenne	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	2	0	5	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	10	0
† Cloud	0	0	2	0	0	0	0	0	0	0	1	1
Coffey	0	0	0	0	0	0	0	0	0	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	4	1	0	0	0	0	4	0	0	0	12	0
Crawford	3	3	0	0	1	1	0	0	1	0	0	0
Decatur	0	0	0	0	0	0	0	0	11	0	2	0
Dickinson	0	0	0	0	0	0	0	0	0	0	1	0
Doniphan	0	0	0	0	0	0	2	0	12	0	1	0
Douglas	5	2	1	0	2	0	0	0	2	0	12	1
Edwards	0	0	1	0	0	0	4	0	0	0	0	0
Elk	2	1	0	0	0	0	0	0	0	0	0	0
Ellis	0	0	0	0	12	0	1	0	0	0	0	0
Ellsworth	1	1	0	0	0	0	3	0	0	0	0	0
Finney	0	0	0	0	7	1	0	0	0	0	0	0
Ford	0	0	0	0	1	1	5	0	2	0	0	0
Franklin	2	2	0	0	2	0	0	0	2	0	5	0
Gary	1	0	1	1	2	0	4	0	0	0	2	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
† Graham	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
† Gray	0	0	0	0	0	0	0	0	0	0	0	0
† Greeley	0	0	0	0	0	0	2	0	9	0	0	0
Greenwood	0	0	0	0	0	0	0	0	0	0	0	0
† Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
† Harper	1	1	1	0	2	0	0	0	1	0	25	1
Harvey	0	0	0	0	0	0	1	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	1	0	0	0	1	0	15	0	2	0	0	0
Jackman	0	0	0	0	1	1	4	0	0	0	0	0
Jefferson	0	0	2	0	0	0	20	1	14	0	25	0
Jewell	0	0	1	0	0	0	0	0	0	0	0	0
Johnson	0	0	0	0	0	0	0	0	0	0	0	0
Kearny	0	0	0	0	0	0	0	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	1	0	1	0	0	0	0	0	0	0
Lane	1	0	0	0	0	0	0	0	0	0	0	0
Leavenworth	7	6	1	0	0	0	1	0	0	0	2	0
Lincoln	0	0	0	0	2	0	0	0	1	0	0	0
Linn	0	0	0	0	0	0	0	0	0	0	0	0
† Logan	0	0	0	0	0	0	0	0	0	0	0	0
† Lyon	1	1	0	0	1	0	2	0	1	0	0	0
Marion	1	1	1	1	0	0	0	0	0	0	0	0
Marshall	1	1	1	1	0	0	0	0	0	0	0	0
McPherson	1	1	0	0	0	0	2	1	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	1	1	0	0	0	0	6	0
†Miami	2	2	0	0	0	0	8	0	0	0	0	0
Mitchell	1	1	0	0	0	0	0	0	1	0	0	0
Montgomery												
†Morris												
†Morton												
Nemaha	0	0	0	0	0	0	6	0	0	0	0	0
†Neosho												
Ness	0	0	0	0	0	0	0	0	5	0	0	0
Norton	0	0	0	0	0	0	0	0	0	0	0	0
Osage	1	0	0	0	0	0	1	0	38	0	0	0
Osborne	9	0	0	0	0	0	2	0	4	0	0	0
†Ottawa												
Pawnee	0	0	0	0	1	0	9	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	3	0	0	0
Pottawatomie	2	0	0	0	0	0	2	1	30	0	4	0
Pratt	0	0	0	0	0	0	5	0	0	0	4	0
*Rawlins	1	1	0	0	3	1	5	1	20	0	7	0
†Reno												
Republic	0	0	0	0	0	0	7	0	3	0	13	0
Rice	0	0	0	0	0	0	1	0	0	0	0	0
†Riley												
Rooks	0	0	0	0	0	0	0	0	0	0	0	0
Rush	0	0	0	0	4	0	0	0	0	0	0	0
Russell	0	0	0	0	0	0	0	0	0	0	0	0
Saline	2	1	0	0	0	0	0	0	3	0	0	0
Scott	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick	1	1	0	0	0	0	3	0	3	0	11	0
Seward	0	0	0	0	0	0	2	0	0	0	3	0
Shawnee	1	0	0	0	2	0	2	0	46	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	1	0	0	0
*Stafford	1	3	1	0	6	2	0	2	0	0	6	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	0	0	0	0	1	0	5	0	3	0	14	0
Thomas	0	1	0	0	0	0	0	0	0	0	0	0
†Trego												
*Wabaunsee	0	0	0	0	1	0	2	0	1	0	7	0
Wallace	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	2	0	0	0	2	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	3	0	0	0	2	1	0	0	0	0	1	0
Woodson	1	0	2	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	1	0	1	0	0	0	0	0
Cities:												
Atchison	3	3	2	1	4	1	1	0	4	0	0	0
Coffeyville	3	3	0	0	0	0	1	0	0	0	0	0
Fort Scott	1	0	0	0	0	0	0	0	0	0	2	0
Kansas City	6	23	12	6	6	1	12	0	17	0	36	0
Leavenworth	2	1	2	0	2	0	1	0	0	0	4	0
Parsons	5	1	0	0	0	0	0	0	4	0	0	0
Pittsburg	5	2	1	0	3	0	2	0	7	0	0	0
Topeka	6	6	2	2	4	0	3	0	52	0	1	0
*Wichita												
State Institutions.	33	0	0	0	0	0	0	0	0	0	0	0

208 cases of chicken-pox reported ; no deaths.
* Includes report of previous month received too late to be included last month.
† No report.

Get into the game !

Push ! If you can't push, pull ; if you can't do either, get out of the way and give the other fellow a chance.

The Role of Insects in the Transmission of Disease.

By MARK A. BROWN, M. D., Health Officer, Cincinnati, Ohio.

Modern sanitary science dates its beginning to the discovery that many diseases are dependent directly or indirectly upon the agency of germs. Year by year the list of these so-called infectious diseases has grown until now, to the lay mind, the terms disease and germ are practically synonymous. With the passage of time we have been able to pin to many of the infectious diseases each its causative organism, which differs in one or more important morphological characteristics from all other organisms. It must be confessed, however, that there still remains a long list of diseases which experience teaches us must be infectious in nature, but in which no causative organism has as yet been discovered.

In the discussion of diseases that are caused by insects we inevitably establish two divisions: first, those diseases which must necessarily be transmitted by insects, and second, those diseases in which insects are purely accidental causes, though often of extreme importance. Under the first division the most conspicuous example is malaria. We know positively that the poison of malaria—the plasmodium—is transmitted from one individual to another through the bite of a certain variety of mosquito—*Anopheles*—and furthermore, as far as we are aware, it is not transmitted in any other way.

The remedy then is not far to seek. Kill off the mosquito and malaria will disappear. Unfortunately, the practical application of this simple advice is a matter of the greatest difficulty and the end sought must be obtained in more roundabout ways.

Conspicuous in the second division is the transmission of typhoid fever through the agency of flies; we know positively that these insects may transmit typhoid fever, though we also know that this agency is only one, and at that not the principal, cause in the dissemination of the disease. Therefore, if we kill off the flies or prevent their access to our food and drink we cannot eliminate typhoid, though unquestionably we can by this means very materially diminish it.

Under the first division we can also state for a fact that the disease malaria is transmitted through the bite of the insect, while in the second division the bite has nothing to do with the infection; dissemination is accidentally conveyed through the soiling of the

wings, feet and mouth of the insect with infected germs or through the insects' droppings.

Bearing this in mind, we are inevitably led to the two biologic rules of Stiles, to which rules there are but few exceptions; diseases which are accidentally spread by insects are caused by parasitic plants, particularly by bacteria; diseases which are dependent upon insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms. Bearing these few axiomatic principles in mind, let us turn our attention to some of the bacteria that cause disease and follow their transmission.

First, typhoid fever, caused by the bacillus *Typhosus*. The germs of this disease exist in vast numbers in the intestinal tract, and consequently appear in the evacuations. Unless the most stringent measures are immediately taken for the proper disinfection of these discharges, they become almost at once the haven for innumerable flies, the bodies of which harbor innumerable typhoid germs. The alternate visitations of the common house-fly from the latrine, trench or privy, his natural habitation, to the kitchen and dining-room, afford most ample opportunity for the infection of our food and drink, particularly milk.

If the danger of infection from the unprotected privy-vault in cities is great, what must be the conditions in the rural districts, where modern sanitary methods, if appreciated at all, are, as a rule, passed by as things of little moment? In the country the vault is, as a general thing, located and constructed with little or no attention to sanitary rules. Always open, never screened, seldom cleaned, never disinfected, it would be strange indeed if it were not, through the passive agency of insects, a frequent source of pollution. We may at the present time even go so far as to say that all flies, bed-bugs, fleas, roaches and kindred insects not only may, but actually do, carry infective organisms, and the kind of germ varies only with the nature of the infective material with which they have been in contact. All physicians have noted the predilection of flies for patients suffering from pulmonary tuberculosis, particularly when the cases are well advanced; indeed they often become a most serious annoyance unless extra precautions are taken. They are especially fond of the sputum containing, as it often does, innumerable bacilli, and in this way, as proven by Joly, infect the food, milk, etc., as well as the bedding and often wounds and abrasions of others. In addition, the presence of tubercle bacilli has been demonstrated in the alimentary canal of the fly, opening up another

possible source of infection. While these two diseases are the most important in this climate that may be conveyed by the passive agency of insects, you will at once see that many others may be conveyed in this manner, particularly diphtheria, the various suppurations, influenza; in fact, in all diseases in which the infective material is expelled from the alimentary or urinary tracts, by means of the sputa or through discharges from wounds.

I shall not attempt, at this time, to go deeply into the active role of insects in causing disease. By active I mean that the insect must convey the infection by the agency of a wound which the insect itself inflicts. Within the meaning of this definition, the mosquito, flea, ant, gnat, bedbug, chigger, *Acarus scabie*, may all be classed as actively conveying causative agents of disease.

The most important of all insects, of course, as active carriers of disease agents, is the mosquito. Chiefly through the studies of American scientists, particularly Walter Reed, Carroll and Lazear, the poison of yellow fever has been positively proven to be conveyed through the medium of one single species of mosquito, the *Stegomyia fasciata*. As a consequence, this country will never again have reason to tremble at the announcement that yellow fever has again obtained a foothold upon our shores.

In this portion of our country, the only disease conveyed actively that may at all occasion alarm is malarial fever. As has been mentioned above, as far as we now know, malaria is conveyed from one individual to another only through the bite of one special variety of mosquito, the *Anopheles claviger*.

In this latitude the two principal diseases of this nature with which we come in contact are malaria and typhoid fever, the one conveyed exclusively and actively by the mosquito, the other communicated perhaps more frequently than we are aware, though passively, by the common house-fly. The question is, with the knowledge at our command, what can we do to rid ourselves of these diseases? First, as to typhoid fever: Typhoid fever is becoming more and more regarded as a country disease, and it is from rural sources that the water-supplies of large cities are becoming contaminated.

In the country or small village each house has its own water-supply, usually a well. Water-closets are the exception, of course, and excreta, where not thrown upon the ground, are deposited in open or box privies. Drainage from these sources is washed into open streams and becomes a source of danger for larger towns, as in the famous epidemic at Plymouth, Pa., or sinks into the soil

and pollutes the well from which the drinking-water of the household is obtained; or the food-supply becomes contaminated through the excursions of flies. It is also to be remembered that the dejecta of patients in whom the typhoid had not been sufficiently developed to be recognized nevertheless contain innumerable typhoid bacilli, and that these bacilli are also thrown off in many cases for weeks or even months after convalescence has been established. So that in country districts, unless the greatest care is taken *at all times* with the excreta, outbreaks of typhoid fever will readily occur. In the country, it should always be recommended that some form of earth closet be used. If this is done, and the excreta of patients promptly disinfected, the flies in the neighborhood will have practically no opportunity to become contaminated with typhoid germs. Every endeavor should be made to rid the neighborhood of flies. The food preferred by the larvæ of the common house-fly is manure derived from horses, and the rapidity of breeding of these insects in such a locality is almost beyond belief. The remedy is simple, though adding to the work of the farm. The manure should be collected, preferably daily, and placed in either a pit or vault or in some sort of closet which can easily be arranged at one end of the barn. This receptacle should be made tight to prevent, as far as possible, the entrance or exit of flies. After each accumulation chlorid of lime should be added. The chlorid of lime treatment has been found to be the cheapest and most efficacious.

The old idea formerly in much vogue that malaria is caused by breathing the miasma of swamps has been exploded. We now believe that this disease is contracted only through the bites of mosquitos of the genus *Anopheles*. Theoretically, then, if we can prevent the breeding of mosquitos of this genus, and if we can prevent them from attacking humans, the problem is solved. Practically, those are the lines upon which we proceed in attacking this disease. The breeding-places of *Anopheles* are quite diverse; in still pools at the sides of small streams, "in the swampy pools at the margins of larger pools, in stagnant water in ditches, in the beds of old canals, in the still water at the sides of springs, and occasionally, though rarely, in old horse troughs." (L. O. Howard.)

Fortunately, *Anopheles* do not fly great distances, probably not over a mile, so that if breeding-places within the radius are eliminated the danger of malaria becomes rather remote. Such breeding-places as described above are abolished by drainage or are filled with earth, and are still further rendered uninhabitable to mosqui-

tos by covering such water as remains with a thin film of kerosene oil. The action of the oil is to prevent the growth of the immature pupa into the fully developed mosquito. The work of this character that has been done in reclaiming thousands of acres of swampy lands in New Jersey alone is a proof of the entire practicability of these procedures. In malarious districts, all houses should be carefully screened, and after screening search should be made indoors for mosquitos that may have already gained entrance. In malarious districts people should not sit out of doors at night if they wish to avoid infection. It must not be forgotten that the malaria patient himself is a most important potential factor in disseminating the disease, and pending the destruction of the plasmodia in his blood by means of quinine, he should be carefully screened from *Anopheles*.

Beware of Flies.

The common house-fly is a carrier of disease. Typhoid fever, diarrhea, dysentery and tuberculosis are carried by flies.

No longer do we consider flies as merely annoying, but we recognize in them a very important factor in the spread of certain diseases, particularly those mentioned above.

FLIES ARE FILTHY. The house-fly is particularly filthy, because it has its birthplace and lays its eggs almost exclusively in horse manure.

Flies feed on food and also on the worst kind of filth. They go from one to the other. It is easy to understand how they carry disease germs to our food in this manner.

Our domestic animals, the dog and cat, though far from clean in all their habits, we like to have about us, but we keep them in their proper place. The house-fly, on the other hand, is tolerated everywhere, crawls over our hands and faces, gets into the milk, walks over all our food, often soiling and contaminating everything that comes in contact with its filthy feet and tongue.

FLIES ALSO FEED ON SPUTUM. Who has not seen flies feeding on sputum on our pavements and streets? And, as there are people who have consumption continually spitting on the public pavements, is it not simple to see how the germ of the disease can be taken up by the fly, carried away, and perhaps deposited in our homes?

It is particularly essential that flies be kept away from everything that infants and very young children come in contact with,

particularly all feeding utensils and things that children are likely to put in their mouths.

How can we combat this dangerous nuisance?

The essential thing is to do away with the breeding-places of these dirty pests.

It may be said that flies will breed in any decomposing animal or vegetable matter. The most common places are manure, uncleaned stables, privies, and in and about cans and receptacles used for the storage of garbage.

Every householder in SELF-DEFENSE should destroy the breeding-places of these pests.

Store garbage in tightly covered cans, kept in a screened enclosure, so that flies cannot get to it; see that it is removed very frequently during the summer months. Wash and disinfect cans frequently.

If possible store manure so that flies cannot get at it to lay their eggs, and have it removed once a week.

All persons selling food of any description should see that the goods are protected from flies, and should not expose food in front of their stores where it can be contaminated by both flies and street dust.

Do not allow decaying matter of any kind to accumulate on your premises.

Screen the doors and windows of your house, particularly the kitchen, in order to keep the flies from entering and getting on the food.

Remember that the female fly lays about 120 eggs, which in the course of a few hours become maggots, and after another transformation the full-grown fly appears at the end of ten days.

As in most matters of sanitation and hygiene, CLEANLINESS is the watchword. CLEANLINESS about your house and property will prevent flies breeding.

Warning.

Go 'way, Mistuh Skeeter! Don' you sing dat song to me!
I's hyuhd about yoh doin's; you's es tough as you kin be.
You's been aroun' a-lunchin' on malaria an' things
Till you's jes' about as danj'us as a rattlesnake wif wings.

I didn' use to min' you when you come a-browsin' 'roun',
Ca'ee I knowed a slap 'ud send you tumblin' senseless to de groun';
But since I hyuhd dem white folks I's as skyah't as I can be.
Go 'way, Mistuh Skeeter! Don' you sing dat song to me!

—Public Health.

Flies in Relation to Food and Drug Inspection.

The recent legislature passed a law designed to protect foods and drugs from contamination from flies, dust or any infectious material and giving the State Board of Health sanitary control of places and things where foods or drugs are prepared or sold.

The inspectors for the State Board of Health reported to the department after their first inspection that they were amazed and astonished because of the filthy and unsanitary conditions found in many of the grocery stores, bakeries, hotels, restaurants and other places where foods were prepared, sold or manufactured. On the other hand, many places were found in which the sanitary conditions were all that could be expected and where the owner or proprietor seemed to have due regard for the cleanliness of his surroundings and the wholesomeness of his products.

Long-continued custom in the manner of display of certain food products had resulted in a lack of appreciation, or the inability to consider whether or not such custom was in accordance with sanitary science, or would subject the product displayed to contamination from outside sources. It was so common and universal as to no longer excite protest or even comment, yet perishable fruits and vegetables, which were neither cooked nor washed, in some instances were permitted to be open to contamination by the fly and street dust. Sanitarians are now quite generally agreed that the fly is not only a frequent but an important cause or medium by which typhoid fever and tuberculosis are spread. Indeed, it is coming to be believed that infected food is more often the cause of typhoid fever than a polluted water-supply. Investigators have determined, time and time again, that flies fed on tubercular sputum are able to contaminate foods or utensils used in eating or drinking by carrying the germs upon their feet and legs as well as in the fly-speck. One bacteriologist reports that he was able to count 5000 tubercular germs in a single fly-speck. These results, having been verified by others, are now accepted by sanitarians as being undeniable, hence the absolute necessity of excluding the fly from all places where foods, drinks or drugs are prepared or sold.

These facts have been the basis of the department's rule that baker's products must be kept under cover to insure freedom from fly contamination.

Once upon a time a certain baker in the capital city refused to take kindly to the suggestion of the food inspector to keep his pies

under cover; an appeal was taken to the chief inspector, whereupon the chief inspector made a visit to the bakery in order to acquaint himself with the actual conditions. A miscellaneous lot of pies and cakes were upon the counter and shelves, and a considerable number of flies were holding a picnic thereon, some of them having undoubtedly just arrived from feasting on the nice, fresh pile of horse droppings which was noticed on the street near the door. A lemon pie, with its white-sugar-and-egg surface, seemed to be the favorite pie for the flies, as it was dotted with these nice, clean little flies, who were engaged in eating their dessert after the more substantial meal in the street; then you know they had to wipe their feet and brush their wings and be reasonably clean, for they were now in a bakery of the capital city.

A debate now arose as to whether or not the tiny black specks on the white surface of the pie were fly-specks or only particles of burnt sugar, but as there seemed to be no way of settling the disagreement by argument, the chief inspector secured the lemon pie as a sample, sent portions of the meringue surface to the bacteriologist and requested an opinion as to what the black specks were, and, if fly-specks, to look for bacteria, and make a report. Accordingly the Board's bacteriologist made an examination and reported the specks as fly-specks, and that they were swarming with bacteria, mostly of the spore and rod forms belonging to the fermenting type of bacteria; but horrors! there were also a considerable number of the pus-forming germs. *Nice, clean*, black little fly-specks containing pus-forming germs for your lemon pie! Will you have yours decorated that way? We had a micro-photograph taken of one little speck greatly magnified, so that you can see the swarms of bacteria. Here it is on this page.

The department believes that with this sort of evidence to present to a jury they could convince any reasonable court that the grocer, butcher, baker, restaurant or hotel proprietor, soda or ice-cream dispensing druggist, or pop vendor, who neglects or refuses to protect his products from contamination by the fly is guilty of violating the sanitary provisions of the law.

The above facts have been the basis of the campaign for cleanli-

ness, inaugurated by the State Board of Health, and the occasion for the institution of their sanitary score-card, by which means every place inspected is scored as to the sanitary conditions. The score made by the inspector is returned to the chief inspector and kept on file in the office for future comparison of inspections. Where it is found that conditions are below seventy-five a letter of warning is sent to the owner of such place, and if upon a second inspection no improvement is made, it will be considered sufficient grounds for filing complaint with the county attorney.

Screens.

God bless the man who first invented screens. The device that has at once brought the greatest degree of personal comfort, cleanliness of household and individual safety is the door and window screen. No other invention of the last quarter of a century can compare with its worth and utility as a life and health saver, and yet, until recently, screens were used principally to exclude the fly and mosquito solely on the ground of personal comfort.

Heads of families who are looking for an investment may be assured of one that is certain of enormous returns through the prevention of sickness and maybe death by the early and effective screening of every outside door and window of their home. It is much easier to keep flies out by proper screening than to get them out once they get in. *Screen your house!* Scientists of all countries are agreed on one point—that the fly is a carrier of disease germs—therefore, screen your house!

Flies love to feast on filth, and then get into the house and wipe their feet on your cake or baby's bottle. *Screen the house!* It is true they are nature's scavengers, but they spread filth and very often disease in doing their work; besides, it is better to do your own scavengering by keeping clean than to have the fly do it for you; for not only is the fly a dangerous companion, but clean people are beginning to suspect that those who have flies about them are dirty housekeepers, else flies would not be there. If, therefore, you wish to bear the reputation of cleanliness in your neighborhood, be sure that your trash and manure heaps are frequently removed, and that your HOUSE IS PROPERLY SCREENED!

Tanglefoot.

The common house fly, which was never known to wipe its feet, is a carrier of typhoid fever and tuberculosis, therefore the attention of the household is called to the following method of extermination. The primary step is to get rid of its breeding-places, which are usually manure piles and damp places where slops and dish-waters are emptied. Do not permit such on your premises. Screen your residence well; screen all galleries and porches. This will expose the fly to the direct rays of the sun—a thing he cannot stand. At all screen doors on galleries and porches the fly hangs around in the shade, and when the door is opened he enters the house.

For the purpose of destroying flies in the house, the following is known to be the cheapest and most effectual agent: Take two pounds of resin and one pint of castor-oil, boil together until it is well mixed, pour off in open-mouth bucket, take an ordinary paint-brush and smear while hot on any kind of paper—an old newspaper is good—and place several about the room. A dozen of these may be put in one room at a cost of one cent. It is an effectual tanglefoot, and placing it on old newspapers makes it easy to handle. It can be pinned to a window-curtain or a table-cloth, avoiding thereby blowing about the room and sticking up the furniture, etc. One mixture as directed above will last about three fly seasons. It never loses its strength, does not deteriorate, and can be kept in an ordinary fruit-jar or open-mouth bucket for any length of time and heated when needed.— *Texas Bulletin*.

Fleas.

One of our exchanges, after quoting the article on plague in the last *Bulletin*, says: "Now if the board will tell us how to quarantine against fleas when the open season arrives it will confer a still greater favor." Could we do this in its entirety much suffering could be prevented and many lives saved. Unfortunately, we know of no way to entirely keep rid of fleas, but very much may be done. The very means that will prevent rats from coming to our places will prevent fleas. A basement with a complete cement floor, which is kept clean and free from litter and rubbish, deprives the flea of the dirt in which it will live and breed. Floors and carpets should be kept clean and can be dusted with flea powder or sprayed

with an insecticide which will destroy the fleas. Finely powdered air-slaked lime spread on floor or carpet and swept off will, it is claimed, drive them away.

They live and breed in the fur of animals, especially cats, dogs, rats and mice, and if they are allowed in the house fleas must be expected. There are on the market preparations which, sprayed into the hair of an animal, will kill the fleas. If animals must be allowed in the house these should be freely used, for animals are our most prolific source of fleas.

When we have learned to build our houses with concrete basements and foundations, to keep domestic and wild animals outside, banish carpets that cannot be taken out and shaken each day, and have our floors built of some smooth material which cannot harbor insects, we will have little trouble with fleas, but you can't quarantine the —— rascals. They have no respect for quarantine regulations, but by persistent effort and not allowing their breeding-places to exist they can be kept away.— *California Bulletin*.

The Fly and the Spider.

Written expressly for the BULLETIN, by ED BLAIR, Spring Hill, Kan.

"Will you walk into my parlor,"
Said the fly unto the spider,
"'T is a cosy little corner
Filled with sorghum, wine and cider,
Come right in, don't mind your feet,
For I never keep things neat."
And the spider, somewhat wary,
At such sweet, alluring kindness,
Hesitated e'er he entered,
Nor was dazzled into blindness
By a clean and shiny floor.
For with filth 't was littered o'er.
"What is this?" the spider questioned,
As some sticky stuff clung to him
And his legs seemed heavy laden,
And a creepy chill passed through him.
"Just a few germs," said the fly;
"You won't mind 'em by and by."
"Follow me, now, Mr. Spider,
Follow me, step in my tracks, sir,
'T is such fun to mix with germs, sir,
Cross the room and then right back, sir.
See! the walls are covered o'er
With the same germs as the floor.

- "There are germs here from the hovels,
Germs from every loathsome creature,
From the sick-rooms and the dying,
All of them in here I feature.
I just fatten on such things,
Hear me buzz my gaudy wings."
- "I am faint, it seems, from walking
Through your parlor," said the spider:
"Will you kindly let me rest here
While you bring some wine and cider?"
- "Wine and cider!" said the fly,
I will show *you, by and by.*"
- "But I'm dizzy from this walking
And these germs I do not like,
Open wide the door, kind Mrs.,
And I'll spin my yarn and hike."
- "You will spin your yarn no more"
Said the fly—"Your days are o'er.
- "Once you spiders found us easy
When you praised our eyes and wings,
And you lured us to your parlors
There to show us 'pretty things.'
Now we're tricked on no such terms;
You're not in it with our germs.
- "You will stay here, Mr. Spider,
You're my victim," said the fly,
"And these germs, as first I told you,
You'll not mind 'em by and by;
Once you weaved webs for poor flies
Now with germs we're getting wise.
- "You will stay here—I am going
On my rounds from door to door,
Scattering germs through every household
Where they've been without before;
After game of larger size—
For the folks that are not wise."

TO-DAY'S MOTTO.

"Love your neighbor as yourself," was a motto famed of yore; now it's placed upon the shelf, with about a thousand more; now the child on mother's knee, sees the lovelight in her eyes, while she says: "Where'er you be, boil the germs and swat the flies!" In the olden golden days, preachers told the sacred tale of poor Jonah's erring ways, and his journey in the whale; of the lions in their den, and of Daniel, good and wise; now they preach this creed to men: "Boil the germs and swat the flies!" When my dying eyelids close, and the world is growing dim, while I'm turning up my toes, I may ask to hear a hymn; and the people by my bed, they will sing, with streaming eyes, while each humbly bows his head: "Boil the germs and swat the flies!"

— *Walt Mason, in Emporia Gazette.*

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OF THE

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MAY, 1909.

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VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

[illegible]

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	0	0	0	0	2	0	0	0	5	0
*Miami	2	0	1	0	0	0	0	0	0	0	0	0
Mitchell	2	2	0	0	1	1	1	0	12	0	2	0
*Montgomery												
*Morris												
*Morton												
Nemaha	1	1	1	1	0	0	0	0	3	0	0	0
*Neosho												
Ness	1	0	0	0	0	0	0	0	0	0	0	0
*Norton												
Osage	3	2	0	0	0	0	0	0	26	0	29	0
*Osborne												
*Ottawa												
Pawnee	0	0	0	0	1	0	3	0	0	0	2	0
*Phillips												
Pottawatomie	0	0	0	0	0	0	0	0	15	0	0	0
Pratt	1	1	0	0	0	0	0	0	1	0	0	0
*Rawlins												
Reno	1	1	0	0	3	0	12	0	0	0	20	0
Republic	1	0	0	0	1	0	1	0	3	0	17	0
*Rice												
Riley	0	0	0	0	0	0	0	0	32	0	3	0
Rooks	0	0	1	0	0	0	3	0	0	0	0	0
*Rush												
Russell	0	1	0	0	0	0	1	0	0	0	3	0
Saline	3	3	1	0	0	0	0	0	4	0	0	0
Scott	0	0	0	0	0	0	0	0	5	0	0	0
Sedgwick	4	2	0	0	4	1	11	1	1	0	238	3
*Seward												
Shawnee	2	1	0	0	0	0	2	0	9	0	0	0
Sheridan	0	0	0	0	0	0	0	0	5	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	4	1
*Smith												
Stafford	3	0	0	0	0	0	11	0	0	0	1	0
*Stanton												
*Stevens												
*Sumner												
Thomas	3	1	0	0	0	0	0	0	2	0	0	0
Trego	1	1	2	0	1	1	0	0	1	0	0	0
Wabaunsee	0	0	0	0	0	0	0	0	0	0	14	0
*Wallace												
*Washington												
Wichita	0	0	0	0	4	0	0	0	0	0	0	0
*Wilson												
Woodson	1	1	1	1	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	0	0	0	0	1	0	1	0
Cities:												
Atchison	0	0	0	0	2	0	5	0	1	0	0	0
Coffeyville	2	1	1	0	1	0	0	0	0	0	0	0
Fort Scott	3	3	0	0	0	0	0	0	0	0	0	0
Kansas City	4	14	8	6	9	1	5	2	22	0	70	1
Leavenworth	3	2	1	0	3	1	4	0	0	0	13	0
Parsons	3	1	0	0	0	0	1	0	11	0	7	0
Pittsburg	0	1	0	0	3	0	2	0	2	0	2	0
Topeka	0	8	0	1	7	0	5	0	37	0	34	0
*Wichita												
State Institutions.	32	6	0	0	0	0	0	0	0	0	0	0

* No report.

The fly that doesn't wipe its feet is the chief element of danger during the summer months.

FOOD ANALYSES No. XXIII.

By Prof. E. H. S. BAILEY, Chemist for State Board of Health, and Prof. H. L. JACKSON, Food Analyst.

LAWRENCE, KAN., May 20, 1909.

The following report on the material recently analyzed is submitted:

TABLE SYRUPS.

No.	Corn syrup stated.....	Glucose found, calculated by formula: Di- rect sucrose + 1.76.....	Glucose at 87° by formula: Invert at 87° + 1.63.....	Sucrose by clerget.....	Solids by refractometer.	Retail price per pound, in cent.....
7243		65.5 %	.....	15.0 %	80.2 %	7.5
7246		72.3	74.6 %	10.0	78.2	10.7
7250	70 %	61.5	62.6	11.3	76.4	5.0
7258	90	78.5	80.3	5.6	77.0	6.0
7260				62.6	66.8	15.0
7261	80	88.0	87.6	5.4	78.5	6.6
7262	90	78.4	80.7	7.4	77.6	5.0
7264	80	69.8	70.4	8.4	65.0	5.0
7265	50	55.8	58.4	14.5	80.2	6.0
7267				66.0		25.0
7268		83.9			75.4	11.0
7269	85	74.5	76.1	6.5	76.9	5.0
7272	90	86.9	86.6	3.8	75.7	5.0
7278	75	61.9	60.1	21.7	76.8	7.5
7284	95	71.0		12.7	78.5	
7287		59.7	60.6	15.1	77.6	7.5
7295	95	90.4	88.4	6.5	79.1	5.0
7296	85	78.3		6.7	78.1	
7297	85	76.2	77.8	7.8	78.8	5.0
7301		99.7	102.3		83.3	7.5
7303		48.0	50.3	19.5	79.3	6.4
7307	85	70.4	70.9	9.7	77.6	5.0
7309				61.4	64.9	10.7
7332	90	80.1	82.7	6.6	77.9	5.0
7367	90	85.4	86.6	4.5	78.8	5.0
7369	80	78.0	78.5	12.5	78.0	5.0
7370	60	59.4	62.9	14.1	78.8	5.0
7441	90	79.2	80.0	5.6	76.7	6.0
7442	85	65.8	66.3	9.8	77.3	5.0
7444	70	53.6	55.7	14.0	76.2	5.0
7443		72.1	73.6	10.1	78.3	5.0

The syrups reported above constitute a very good example of the effects of the pure food and drugs laws passed by the national government and the various states.

The Kansas law does not at present require the composition of a syrup to be stated on the package. Several of the states have

laws that do, and this is well, for the consumer has a right to know the composition of a food product he is buying.

Most of the syrups recently examined were substantially as labeled. The effects of the law are shown in several ways. Some syrups have had this statement on the label: "This syrup is prepared according to United States Standards and Guaranteed under the Food and Drugs Act, June 30, 1906, United States Serial Number 15,316." The statement that it is prepared according to United States standards is misleading and tends to deceive the public. This statement on some cans has been obliterated by a blank stamp. A more significant change is a label which formerly read "Fancy Sorghum Packed for the Family Trade." It is now corrected by a supplemental label, reading "Fancy Sorghum and Glucose Syrup Compound." A greater change still is noted in a red can which bears in very large and fancy type in black and gold colors the words "Michigan Maple Syrup," which occupy a space $3 \times 4\frac{3}{4}$ inches. After the food law went into effect a sticker $1\frac{1}{2}$ inches square was placed on the *back* of the can which read in small type: "Maple Flavored Syrup, Corn Syrup, Maple Flavor Extract, 1-10 of 1 per cent. Benzoate of Soda"; thus at last showing it to be made of glucose flavored in imitation of maple syrup, and preserved.

Now glucose or corn syrups are coming on the market as such, and when properly labeled no objection can be raised to them. Some bear a picture of ears of corn on the label. Good! Let corn products be sold as corn products, at corn prices. Several of them have good flavors and constitute nutritious and inexpensive syrups.

Occasionally a syrup has the rank odor and taste of a second molasses, or the so-called "black strap," which is the lowest grade of molasses. These are inferior products of the sugar-house, very dark in color, almost black, with a rather sickening odor, and flavor somewhat suggestive of licorice. When mixed with a large percentage of glucose the taste is not so bad, but they should certainly be labeled and sold for what they truly are.

No. 7265, Tiger Brand Corn Syrup and Sorghum Compound (50 per cent. sorghum, 50 per cent. corn syrup), is one such. It has neither the flavor nor odor of sorghum syrup, but does possess the peculiar rank odor and flavor of a low-grade molasses that could scarcely be sold direct for household use. It contains more glucose than stated. It should be properly labeled.

No. 6332. Label, Maple Sugar. Sy. lead number, 0.745; per cent. ash, 0.806; soluble ash, 0.409; alkalinity of soluble ash, 0.64. Passed.

No. 7484. Syrup. Label, Bayles' Maple-Nut Table Syrup. Manufacturer, Geo. A. Bayles, St. Louis. Proprietor, J. P. Walters, Galena. This is a solution of invert sugar and does not have the ash or lead values of a maple syrup. It costs twenty cents a pint, and the label shows that it is clearly intended to deceive the public by using the word "maple." It is illegal.

EXTRACTS.

No. 1844. Label, Essence of Lemon. Contains 90 per cent. alcohol. Artificial. Manufacturer, the Southwestern Drug Company, Wichita, Kan. Retailer, H. R. Funk, Belle Plaine. Inspector, Tilford. Per cent. oil, 1.62. Illegal.

No. 1877. Lemon Extract. Label, Tincture of Lemon. Manufacturer, the New Drug Exchange, Osage City. Retailer, Santa Fe Pharmacy, Osage City. Inspector Tilford. Per cent. oil, 3.55. The oil from which the extract was made was adulterated. Illegal.

No. 1888. Lemon Extract. Per cent. oil, 8. Passed.

No. 1896. Label, Spirits of Lemon. Manufacturer, R. G. Musgrave, M. D., Cambridge, Kan. Retailer, R. G. Musgrave, Cambridge. Inspector Tilford. Oil, 22 to 23 per cent. Contained spoiled lemon oil. Illegal.

No. 1909. Label, Essence of Lemon. Alcohol, 93 per cent. Manufacturer, McCommon & Harter, druggists, Winfield. Retailer, J. M. Harter, Winfield. Inspector Tilford. Per cent. oil, 3.8. The extracted oil has a rank and slightly musty odor and taste. Illegal.

No. 3546. Extract Lemon. Per cent. oil, 6. Passed.

No. 3547. Label, Yale Brand Absolutely Pure Extract of Lemon. Manufacturer, Steinwender & Stoffregen Coffee Company, St. Louis. Oil, 4 per cent. Illegal.

No. 6366. Label, Kamo Elegant Extract of Lemon. Manufacturer, Paxton & Gallagher Company, Omaha. Retailer, Dillon & Robertson Grocery Company, Atwood, Kan. Lemon oil, 4.5 per cent. Illegal.

No. 7474. Label, Lemon, Joplin Chemical Works, Joplin, Mo. Manufacturer, Joplin Chemical Works, Joplin, Mo. Retailer, R. Hardwick, Galena, Kan. Inspector Pike. Per cent. of oil not to exceed three-tenths of one per cent. Artificially colored. Illegal.

No. 7472. Inspector's label. Manufacturers, Brownfield & Davis, Iola. Retailer, C. C. Kennedy, Yates Center, Kan. Oil of lemon not to exceed three-tenths of one per cent. Illegal.

No. 7475. Label, Lemon, Joplin Chemical Works, Joplin, Mo. Manufacturer, Joplin Chemical Works, Joplin, Mo. Retailer, R.

Hardwick, Galena, Kan. Inspector Pike. Oil not to exceed three-tenths of one per cent. Artificially colored. Illegal.

No. 7476. Vanilla Extract. Label, Compound Vanilla, Joplin Chemical Works. Manufacturer, Joplin Chemical Works, Joplin, Mo. Retailer, R. Hardwick, Galena, Kan. Inspector Pike. Is a mixture of cumarin and vanillin, in which vanillin equals about 70 per cent. The mixture is colored with caramel. It is not a vanilla extract. Illegal.

No. 7483. Label, Seal Lemon. Manufacturer, Kenwood Preserving Company. Retailer, Schmidt Bros., Galena. Inspector Pike. Per cent. of oil not to exceed three-tenths of one per cent. Artificially colored. Illegal.

No. 7483A. Label, Eagle Flavoring Extract of Lemon. Manufacturer, Webb Manufacturing Company, Nashville, Tenn., and Shreveport, La. Retailer not given. Per cent. of oil not to exceed three-tenths of one per cent. Illegal.

No. 3548. Lemon Extract. Oil, 6.9 per cent. Passed.

No. 1323. Label, Good Luck Vanilla Flavoring. Vanillin and cumarin. Manufacturer, Dr. J. H. Oyster, Paola. Retailer, J. N. Jewett, Edgerton. Inspector Tilford. A mixture of cumarin and vanillin, in which cumarin is in excess; colored with caramel. Illegal.

No. 6244. Vanilla Flavor. Properly labeled. Passed.

No. 7477. Pineapple Extract. Label, Middleton's Concentrated Extract of Pineapple. Manufacturer, Joplin Chemical Works, Joplin, Mo. Retailer, R. Hardwick, Galena, Kan. Inspector Pike. Colored with coal-tar dye. It is not a concentrated extract of pineapple. Illegal.

No. 7478. Strawberry Extract. Label, Pure Concentrated Extract of Strawberry. Joplin Chemical Works, Joplin, Mo. Retailer, R. Hardwick, Galena, Kan. Colored with coal-tar dye. It is not a pure concentrated extract of strawberry. It is an imitation. Illegal.

No. 1937. Lemon Extract. Label, Spr. Lemon. Geo. Moulton, pharmacist, Norton. Retailer, Geo. Moulton, Norton. Taken from shelf bottle labeled Tr. Lemon. Inspector Tilford. Per cent. oil, 1.6. Illegal.

VINEGAR.

No. 6365. Vinegar. Label, White Wine Vinegar. Manufacturer, H. D. Lee Mercantile Company. Retailer, Geo. J. Wilson, Alida, Kan. Acid, 3.9 per cent.; solids, 0.26 per cent.; ash, 0.06 per cent. This is a *distilled* vinegar and not a white wine vinegar. Illegal.

No. 7445. Vinegar. Label, Cider Vinegar, by inspector. Taken from bulk. Manufacturer and jobber, J. C. Burgess, Parsons, Kan. Retailer, Saylor Bros., Parsons. Acid, 2.15 per cent.; solids, 1.15 per cent. Illegal.

No. 7465. Vinegar. Label on barrel from which same was taken, Monarch Pure Cider Vinegar, Monarch Vinegar Works. Manufacturer, Monarch Vinegar Company. Retailer, Wilson & Legg, Mildred. Acid, 3.4 per cent.; solids, 0.97 per cent. Adulterated and misbranded. Illegal.

No. 7473. Vinegar. Labeled by inspector, Cider Vinegar. Manufacturer, Joplin Candy and Sugar Company. Retailer, Pinson & Son, Galena, Kan. Grand Regal. Acidity, 3.2 per cent.; solids, 1.2 per cent.; ash, 0.22 per cent. Illegal.

No. 7498. Vinegar. Labeled by inspector, Cider Vinegar. Manufacturer, J. F. McKinney, Columbus. Retailer, J. B. Grisham, Columbus. Acid, 2.4 per cent.; solids, 2.6 per cent.; ash, 0.19 per cent. Illegal.

No. 7527. Label, Vinegar, by inspector. Manufacturer, J. C. Padgett, Hiattville. Retailer, Strode & Williams, Hiattville. Acid, 1.5 per cent.; solids, 1.2 per cent.; ash, 0.18 per cent. Illegal.

No. 7528. Vinegar. Label, Vinegar, by inspector. Manufacturer, J. C. Padgett, Hiattville. Retailer, John Landers, Hiattville. Acid, 1.5 per cent.; solids, 1.3 per cent.; ash, 0.20 per cent. Illegal.

No. 3320. Vinegar. Label, Vinegar. Acid, 3.94 per cent.; solids, 2.16 per cent.; ash, 0.31 per cent.; P_2O_5 in soluble ash, 16.4 mm. Passed.

No. 7482. Cider. Label, Middleton's Pure Apple Cider. Manufacturer, L. D. Middleton, Joplin, Mo. Retailer, R. Hardwick, Galena. It is preserved with benzoic acid, and is, therefore, not pure apple cider. Illegal.

PICKLES.

No. 7516. Pickles. Label, Magic City Brand Pickles. Squire Dingee Company, Chicago, Ill. Manufacturer, the same. Retailer, Miller Bros., Mulberry. Inspector Pike. Aluminum salts present and not stated on label. Illegal.

No. 7157. Pickles. Label, Eagle Brand Fancy Mixed; packed by Steinhorst-Morrin Pickle Company. Retailer, Western Coal and Mining Company, Franklin. Aluminum salts not stated on label. Illegal.

No. 3612. Pickles. Label, Choice Sour Pickles. These pickles were contained in a quart Mason fruit-jar, closed by a zinc cap, in the top of which is inserted a glass or porcelain plate to protect the

contents from the zinc cap. The samples were sent in by a man who had been poisoned and made quite sick by eating one pickle from the can, as had also his wife. The wet pickles contained 0.125 per cent. of metallic zinc. This for the whole can would be equivalent to 53.5 grams of crystalline zinc acetate, showing that the vinegar in the jar has strongly attacked the zinc top. Householders should be warned against purchasing products of an acid nature in this kind of cans, or of the use of such cans for products of strongly acid nature.

No. 7509. Pickles. Label, Extra Fine Sweet Gherkins. Manufacturer, Wm. Henning, Chicago. Retailer, W. A. Bowden, Burden. Preserved with benzoic acid; alum absent. Illegal.

No. 7510. Pickles. Label, Sweet Pickles, prepared with one-tenth of one per cent. of benzoate of soda. Manufacturer, C. F. Claussen & Sons, Chicago. Retailer, S. H. Wells, Dexter. Contains alum, which is not stated on label. Illegal.

MISCELLANEOUS.

No. 7481. Catsup. Label, Middleton's Tomato Catsup. Manufacturer, Joplin Chemical Works, Joplin, Mo. Retailer, R. Hardwick, Galena, Kan. It is preserved with benzoic acid, which is not stated. Illegal.

No. 7466. Catsup. Inspector Pike. Examined for color and preservatives. None found. Passed.

No. 3540. Label, Condensed Tomato Soup. Examined for added color and preservative. None found. Passed.

No. 3555. Honey. Comb honey which had been crystallized markedly. Examined to see if it were pure honey. Was found to be pure honey. It is worthy of mention that the United States Department of Agriculture, Bureau of Chemistry, has examined a large number of samples of strained honey which were known to be pure, and found that a majority of them crystallized more or less, many crystallizing to a large extent. It is found to be a characteristic of certain honey, notably alfalfa honey, to crystallize. Certain other honeys, as sage honey, are noted for their fluidity, and are, on that account, mixed with other honeys to keep them from granulating. A granulated honey may therefore be perfectly pure, although it is perhaps rightfully suspected of containing granulated sugar, either fed to the bees in making the comb honey, or added in the form of sugar syrup to the strained honey.

FOOD ANALYSES No. XXIV.

By Prof. J. T. WILLARD, Analyst for the Board.

MANHATTAN, KAN., May 19, 1909.

I present herewith results upon most of the inspection samples of food submitted since the last report. As an aid to understanding the following table the reader may be reminded that the minimum percentages permitted by the food standards for this state are, in the case of milk, 3.25 per cent. of fat, 8.50 per cent. of solids not fat; the minimum total solids thus being 11.75 per cent. Cream must contain at least 18 per cent. of butter-fat. Ice-cream must contain 14 per cent. and fruit ice-cream 12 per cent. of butter-fat. As the average percentage of fat in unadulterated market

MILK.

Insp. No.	Serial No.	DEALER.	Place.	Percentage.			Class.
				Fat.	Total solids.	Solids not fat.	
7468	2700	J. F. Moerer.....	Yates Center,	5.35	.....	.....	Passed.
7469	2701	I. Miller.....	.....	4.80	.....	.....	..
7485	2714	F. D. Sprecher.....	Coffeyville....	4.45	.....	.....	..
7487	2716	F. D. Sprecher.....	.....	4.50	.....	.....	..
7488	2717	C. L. Hollingsworth.....	..	4.20	.....	.....	..
7489	2718	E. R. Shipley.....	..	4.50	.....	.....	..
7490	2719	R. A. Symms.....	..	4.60	.....	.....	..
7492	2721	Thos. Brinkman.....	..	3.45	.....	.....	..
7494	2723	J. B. Martin.....	..	4.40	.....	.....	..
7495	2724	L. McCabb.....	..	4.05	.....	.....	..
6367	2755	Henry Ocha.....	Maltby.....	3.30	11.14	7.84	Illegal.
6368	2756	Henry Ocha.....	..	3.35	11.33	7.98	..
6369	2757	Henry Ocha.....	..	3.75	11.71	7.96	..
6370	2758	Henry Ocha.....	..	3.65	11.88	8.23	..
6371	2759	Henry Ocha.....	..	3.50	11.14	7.64	..
6372	2760	Henry Ocha.....	..	3.50	11.47	7.97	..
6373	2761	Henry Ocha.....	..	3.30	11.15	7.85	..
6374	2762	Henry Ocha.....	..	3.60	11.63	8.08	..
6375	2763	Henry Ocha.....	..	3.80	12.95	9.15	Passed
6376	2764	Henry Ocha.....	..	3.10	10.91	7.81	Illegal.
7500	2765	D. H. Plowman.....	Caney.....	4.00	11.67	7.67	..
7502	2767	D. H. Plowman.....	.....	3.95	12.30	8.85	..

CREAM.

7467	2699	J. F. Moerer.....	Yates Center,	34.00	.....	.....	Passed.
7486	2715	F. D. Sprecher.....	Coffeyville....	21.20	.....	.....	..
7491	2720	R. A. Symms.....	..	20.00	.....	.....	..
7493	2722	Thos. Brinkman.....	..	21.90	.....	.....	..
7501	2766	D. H. Plowman.....	Caney.....	16.70	.....	.....	Illegal.

ICE-CREAM.

7522	2791	Iola Creamery Co.....	Iola.....	16.20	.....	.....	Passed.
7523	2792	W. L. Crabb.....	..	10.30	.....	.....	Illegal.
7524	2793	W. G. Miller.....	..	13.00	.....	.....	..
7525	2794	Brownfield & Davis.....	..	10.55	.....	.....	..
7532	2797	Phillips & Searle.....	Fort Scott,...	11.70	.....	.....	..
7533	2798	Franz Bachman.....	..	12.40	.....	.....	..
7534*	2799	Franz Bachman.....	..	7.80	.....	.....	..

* Strawberry.

milk is about 3.7 per cent., it will be readily seen that most milk could be adulterated with water and still show a percentage of fat above 3.25. This would, however, reduce the percentage of solids not fat and total solids. Some of the samples reported upon have apparently been of milk treated in the manner indicated. The lower percentage of fat permitted in fruit ice-cream is on the supposition that ordinary ice-cream is used and an addition of fruit made sufficient to reduce the percentage of fat in the product to 12 per cent. or more. The addition of an insignificant amount of fruit should be regarded as an evasion of the law, and the use of fruit flavoring simply does not warrant reducing the percentage of ice-cream. In the case of inspection No. 7634, the sample furnished contained but one strawberry, and hence, even if the percentage had been up to the minimum standard, it should not properly be called strawberry ice-cream.

BUTTER, ETC.

Insp. No. 7521, serial No. 2795. "Shady Brook" Butter. Manufactured by the Iola Creamery Company, Iola, Kan. The prints bear no statement of the weight on the package. The sample included five entire prints with wrappings. The average gross weight of the packages was very slightly under one pound. The average net weight was 15.1 ounces. The butter was of excellent appearance, odor and taste. The composite sample from the five prints showed it to contain: Water, 11.76 per cent.; fat, 85.85 per cent.; casein, 1.61 per cent. Passed.

Insp. No. 7526, serial No. 2796. "Prairie Rose" Creamery Butter. Manufactured by the Meriden Creamery Company, Kansas City, U. S. A., and sold by H. W. Steyer, Iola, Kan. The sample included five prints. No declaration as to weight was made on the packages. The average gross weight was about 16.25 ounces, but the net weight was only 14.6 ounces. Analysis of a composite sample made from the five prints showed the following composition: Water, 12.53 per cent.; fat, 83.69 per cent.; casein, 1.28 per cent. Passed.

Insp. No. 1635, serial No. 2593. Lard. Manufactured and sold by Stines & Liggett, Perry, Kan. Sample was from a five-pound bucket and was quite white and stiff. The iodine value was found to be 44.56. The refractive index at 31° C. was 1.4622, the butyro-equivalent being 54.3. Crystallized from ether the microscopic examination showed lard stearin crystals mixed with a small percentage of beef stearin crystals. The iodine value and the refractive index being below the figures of these constants for pure

lard, together with the microscopic examination, indicate the addition of beef fat to the lard. Illegal.

Insp. No. 12159, serial No. 2695. Egg Substitute. This sample was examined on the request of a jobber with a view to ascertaining its status under the law. The article was orange-colored and had a slightly salty, sweet taste. It appeared to consist principally of starch. Stirred with water and heated it formed an orange-colored pasty mass. Crystals of granulated sugar could easily be distinguished in the uncooked material. The microscopic examination showed it to consist chiefly of corn-starch. The coloring matter is a coal-tar dye. A determination of nitrogen was made, which showed 0.94 per cent. of that element, corresponding to 5.87 per cent. of protein. This probably consists of gelatin, as a test was obtained for that substance by two methods. It would be entirely inadmissible to sell such an article as an egg substitute, since it in no way resembles eggs in its chemical nature or nutritive properties.

DRUG ANALYSES No. XIX.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STIRLING, Microscopist.

LAWRENCE, KAN., May 21, 1909.

Dr. S. J. Crumbine, Chief Food and Drug Inspector, Topeka:

DEAR SIR—We send you herewith the nineteenth report of the drug laboratory, which relates to a number of preparations sent to our analytical department. It is gratifying to state that the tinctures of iodine that are coming in to the department are improving. The percentage of those which correspond to the official in formula and strength is increasing. We should again call attention to the fact that the official formula for tincture of iodine requires the presence of potassium iodide. There are still quite a number of druggists who are not using this salt, but make the tincture of iodine according to the old U. S. Pharmacopœia with iodine alone. It appears that some pharmacists make this preparation by taking the iodine and adding just a sufficient amount of alcohol to make a saturated solution. Some of these are what we might term supersaturated, as they contain more than the official per cent. of iodine.

The essence of peppermint coming to the laboratory is in some cases decidedly under standard, as will be seen by the report. Some of these samples contain quite a percentage of water.

We desire again to refer to the question of strength of solution of carbolic acid. No. 2843 reports one of these. We desire to have a ruling, as soon as possible, as to what should be considered

a solution of carbolic acid, inasmuch as there is no such official preparation. This was referred to in a former report. We would suggest that the Board should regard as a standard for a solution of carbolic acid the standard of the Pharmacopœia for liquefied carbolic acid (*Phenol liquefactum*), and solutions of carbolic acid of any other strengths than the official liquid phenol should have the percentage of phenol that the solution contains stated upon the label, and in addition a statement of its relation to the standard article in strength. One of the notable things regarding the solution of carbolic acid referred to in this report is that while its strength is so low, its specific gravity happens to be very close to that of liquefied phenol. Whether the manufacturers of this article brought this specific gravity up to the liquefied carbolic acid standard intentionally or whether it was accidental is a question.

We desire again to deprecate the practice of grocers handling sweet spirits of nitre. A sample that we have under examination is reported as not only unfit for sale but harmful.

SPIRIT (ESSENCE) OF PEPPERMINT.

Spirit of Peppermint should contain 10 cc. of oil of peppermint and the coloring matter from 1 gram of peppermint herb in each 100 cc. of the spirit, and no added water.

Lab. No.	Insp. No.	NAME.	City.	Cubic centimeters of oil in 100 cc. of spirit.	Remarks.
2800	1774	L. W. Morgan.....	Wichita.....	8.2	No coloring matter.
2810	1784	N. A. Sterns	Colwich.....	10.4	
2814	1788	G. T. Riley	Wichita.....	6.8	
2816	1792	Geo. H. Otte.....	White Water ...	8.2	
2821	1798	W. J. Frazer Drug Co.	Wichita.....	13.1	
2826	1803	T. A. Slaymaker.....	Peabody.....	8.2	
2831	1807	J. A. Miller.....	Haven	0.7	
2834	1811	The Gem Pharmacy.....	Wichita.....	9.9	
2837	1814	T. P. Fry .....	.. ..	trace
2838	1815	The Ideal Pharmacy.....	10.2	Prepared by the Thompson-Taylor Spice Co., Chicago. Alcohol not declared—probably old goods.
2840	1817	J. L. Reid.....	Towanda.....	8.6	
2845	1822	The Jett-Wood Grocery Co..	Wichita....	0.8	
2865	1847	Wm. Looker.....	Oxford.....	2.5	
2867	1849	Gallup & Crow	Wellington	8.9	
2868	1850	Emerson & Harrison .....	.. ..	6.2
2869	1851	Arlington Drug Store.....	.. ..	7.3
2871	1853	Dr. I. T. Gobbert.....	Caldwell.....	11.8	
2872	1854	W. D. Perry .....	.. ..	10.8
2874	1856	F. B. Snyder	Wellington	1.3	Uncolored.
2883	1865	Fox Drug Co.....	Wichita.....	8.1	
2884	1866	W. S. Henrion.....	.. ..	8.8
2889	1871	J. C. Girk.....	Newton.....	8.9	
2890	1872	O'Brien & Tarrant.....	Florence.....	8.5	
2891	1873	L. B. Breese.	Elmdale	5.5	
2892	1874	Arthur C. Brown.....	Osage City.....	9.3	
2893	1875	Red Cross Pharmacy .....	.. ..	2.4
2897	7479	Joplin Chemical Works.....	Joplin, Mo.....	1.3	28.8% water. Declared U. S. P.
2898	1878	Fred A. Bichet.....	Burns.....	8.7	
2903	1883	The Owl Drug Store.....	El Dorado	8.0	
2905	1885	W. Y. Miller.....	.. ..	6.9
2907	1887	The Carlile Co.	Leon.....	10.8	
2911	1891	W. J. Phillips, M. D.....	Beaumont	4.4	
2913	1893	Atlanta Drug Co....	Atlanta.....	3.0	

SPIRIT (ESSENCE) OF PEPPERMINT—CONCLUDED.

Lab. No.	Insp. No.	NAME.	City.	Cubic centimeters of oil in 100 cc. of spirit.....	Remarks.
2914	1894	Henderson & Purdy.....	Burden... ..	9.1	
2921	1901	Wm. Somermier.....	Winfield.....	8.1	
2922	1902	E. M. Burnhart.....	Udall.....	8.7	
2924	1904	P. E. Holmes.....	Douglas.....	8.5	
2925	1905	Plagmann & Doane.....	Winfield.....	9.0	
2926	1906	W. A. Farringer.....	".....	8.2	
2930	1910	Friedenburg's Pharmacy....	".....	11.2	
2932	1912	Sollitt & Swarts.....	Arkansas City..	8.7	
2933	1913	W. N. Harris.....	".....	13.6	
2934	1914	John S. Cree.....	".....	6.9	
2937	1917	City Drug Store.....	".....	9.1	
2989	1919	Dye & Ellis.....	".....	9.5	
2944	1924	The Owl Drug Store.....	".....	6.7	
2945	1925	Hay's Pharmacy.....	".....	7.2	
2947	1927	F. O. Thomas.....	".....	9.7	
2950	1930	Doherty's Pharmacy.....	Belleville.....	9.3	
2951	1931	Arbuthnot & Billingsly.....	".....	9.4	
2955	1935	W. L. Howe.....	Almena.....	9.0	
2958	1938	Lathrop's Red Cross Pharm..	Norton.....	8.2	
2960	1940	I. F. Mallett.....	Phillipsburg....	8.7	
2974	1954	R. H. Trusdle.....	Kirwin.....	6.8	
2976	1956	Rinehart & Slagle.....	Smith Center...	9.4	
2979	1959	Arbuthnot Drug Co.....	Lebanon.....	7.7	Uncolored.
2981	1961	C. E. Lynn.....	Mankato.....	5.0	
2987	1967	G. R. Thomason.....	Cuba.....	9.0	
3002	1982	E. E. N. Coan.....	Barnes.....	1.2	Contains 18.6% water.
3003	1983	The Ideal Pharmacy.....	Greenleaf.....	4.7	Contains 11.1% water.
3007	1987	F. B. Vawter.....	Blue Rapids....	9.0	
3011	1992	E. D. Vincent.....	Marysville.....	7.5	
3015	1995	W. B. & M. Hawk.....	Beattie.....	3.8	
3017	1997	Dingman's Drug Store.....	Hanover.....	8.4	
3032	2012	Axtell Drug Co.....	Axtell.....	trace	Uncolored; 88.6% water.
3038	2018	E. J. Clark.....	Summerfield....	1.4	Preparation has a dirty brown color.
3042	2022	C. H. Hayes.....	Goff.....	7.0	Water present.
3035	2015	I. E. Henry.....	Summerfield....	15.5	
3051	2031	Arthur Poole.....	Corning.....	8.6	
3066	2046	L. M. Summers.....	Wheaton.....	7.9	
3069	2049	C. O. Gwyn & Co.....	Onaga.....	5.4	
3076	2056	Corner Drug Store.....	Leonardville...	8.4	
3078	2058	Cook's Drug Store.....	Cleburne.....	5.5	Uncolored.

SPIRIT OF CAMPHOR.

Spirit of camphor should contain 10 grams of camphor in each 100 cc. of spirit, and no added water.

Lab. No.	Insp. No.	NAME.	City.	Grams of camphor in 100 cc. of spirit.....	Remarks.
2794	1768	Dr. S. C. Whitney.....	Clearwater.....	8.0	
2795	1769	The Van Werden Pharmacy.	Wichita.....	10.0	
2798	1772	I. W. Morgan.....	".....	8.0	
2802	1776	Model Drug Store.....	".....	13.0	
2804	1778	Fred L. Johnson.....	".....	10.0	
2805	1779	May Bros.....	Andale.....	10.0	
2809	1783	N. A. Sterns.....	Colwich.....	9.0	
2811	1785	J. F. Baehr.....	Wichita.....	9.0	
2813	1787	Cole & Thomas.....	".....	8.0	
2818	1794	R. H. Shippey.....	Peck.....	12.0	
2823	1800	The Wichita Drug Co.....	Wichita.....	9.0	
2825	1802	G. F. Gehring.....	".....	8.0	
2828	1805	D. J. Roberts.....	Peabody.....	13.0	

SPIRIT OF CAMPHOR—CONCLUDED.

Lab. No.	Insp. No.	NAME.	City.	Grams of camphor in 100 cc. of spirit.....	Remarks.
2832	1809	Dr. T. H. Cornwall & Son....	Mount Hope....	32.0	Mfd. by Thompson-Taylor Spice Co., Chicago. Labeled U. S. P.
2839	1816	B. W. Gilchrist.....	Bentley.....	16.0	
2841	1818	J. L. Reid	Towanda.....	20.0	
2842	1819	Frank Janner.....	Benton.....	19.0	
2847	1824	Jett-Wood Grocery Co.....	Wichita.....	13.0	
2863	1845	H. R. Funk.....	Belle Plaine....	8.0	Labeled U. S. P.
2864	1846	L. S. Constant.....	.....	8.0
2870	1852	F. W. Olmstead.....	Caldwell.....	11.0	
2878	1860	Sharp & Vincent.....	Wichita.....	28.8	
2879	1861	O. E. Paullin.....	.....	8.8
2885	1867	G. W. Kates.....	Newton.....	32.8	Labels very dirty; brown sediment in samples.
2906	1886	C. H. Selig	El Dorado.....	9.0	
2909	1889	Dr. W. W. Jones	Piedmont.....	15.3	
2910	1890	W. J. Phillips, M. D.....	Beaumont	10.5	
2918	1898	Hotel Drug Store.....	Grenola.....	4.7	
2919	1899	Dr. W. B. Mason & Son.....	12.6	Water added, 30.5%. Water added, 8.5%. Sediment in sample.
2923	1908	Jas. G. Durham.....	Douglasa.....	7.7	
2940	1920	Dye & Ellis.....	Arkansas City..	9.7	
2942	1922	S. & S. Drug Co.....	.....	9.9
2962	1932	Republic Pharmacy, Haning & Reed, props.....	Belleville.....	9.0	
2966	1936	Geo. Moulton.....	Norton.....	6.0	Sediment in samples. Water added, 21.4%. Sediment in samples.
2969	1939	D. G. Hamilton.....	.....	11.4
2961	1941	H. A. Harmon.....	Phillipsburg....	8.5	
2962	1942	Geo. James & Co.....	.....	11.0
2964	1944	Dr. G. A. Van Diest.....	Prairie View....	9.0	
2965	1945	J. F. Cote.....	..	8.3	Alcohol, 70% declared. Contains 18.5% added water. Made by Thompson and Taylor Spice Company, Chicago.
2966	1946	Dr. C. E. Burtch	Athol.....	8.2	
2967	1947	The Kensington Pharmacy, E. J. Hollister, proprietor,	Kensington.....	9.6	
2970	1950	Richardson Drug Co.....	Omaha, Neb.....	.....
.....	.....	L. A. Schemper.....	Sanford.....	6.3
2971*	1951	P. Bethke.....	Stuttgart.....	2.2	Samples contain sediment.
2972	1952	Dr. H. G. Brothers.....	Agra	8.5	
2973	1953	Kirwin Drug Co.....	Kirwin.....	15.4	
2975	1955	R. M. Tinney, M. D. ....	.....	7.8
2977	1957	Chatelle & Hamilton	Smith Center...	14.2	
2978	1958	Grisell & Thompson.....	Lebanon	9.4	Water added, 39%. Camphor not all in solution.
2980	1960	Weeks Drug Co.	Mankato.....	10.4	
2983	1963	O. A. Stanton & Son.....	Morrowville	10.8	
2986	1966	S. L. Yoder & Son	Haddam	9.9	
2994	1974	Smith Drug Co.....	Washington	6.0	
3005	1985	The Rommel Drug Co.....	Waterville.....	9.1	Water added, 12.2%.
3009	1989	McBee's Pharmacy.....	Howard.....	9.6	
3011	1991	H. Cottrell	Marysville.....	13.8	
3013	1993	D. von Riesen.....	.....	11.1
3016	1996	McReynolds' Pharmacy.....	Beattie.....	10.2	

* This sample was very dark in color, dirty, and contained some camphor which was not in solution. Contained about 50.5% added water. Sample is declared to contain 5 drams camphor to the pint and 45% alcohol.

TINCTURE OF IODINE.

Tincture of iodine should show by assay about 6.86 grams of iodine in each 100 cc. of tincture, and should contain about 5 grams of potassium iodide in each 100 cc. of tincture.

Lab. No.	Insp. No.	NAME.	City.	Grams of iodine in each 100 cc. of tincture.....	Pot. iodide.
2803	1777	Model Drug Store.....	Wichita.....	8.1	None.
2833	1810	The Gem Pharmacy .....	.....	6.2	Present.
2900	1880	Palace Drug Store.....	El Dorado.....	5.9	None.
2902	1882	H. W. Julian .....	.....	5.0	.....
2912	1892	Newton Drug Co.	Newton.....	7.0	Present.
2915	1895	Bailey's Drug Store	Burden.....	4.7	None.
2917	1897	R. G. Musgrave	Cambridge.....	6.8	Present.
2927	1907	R. B. Bird	Winfield.....	7.0	.....
2931	1911	Brown & Son .....	.....	5.3	.....
2938	1918	Dye & Ellis	Arkansas City..	6.5	.....
2946	1926	F. O. Thomas .....	.....	6.9	.....
2953	1933	Moore's Pharmacy	Almena.....	3.2	.....
2963	1943	J. L. McCormick & Co.....	Phillipsburg....	6.3	.....
2968	1948	Jim—The Dutch Druggist.....	Kensington.....	6.8	None.
2982	1962	Dr. G. M. Hartwell.....	Jamestown.....	4.5	.....
2984	1964	The City Pharmacy	Haddam	5.6	Present.
2990	1970	J. A. Brown.....	Washington	5.4	None.
2995	1975	Palace Drug Store.....	.....	3.0	Present.
2996	1976	N. N. Gardner, M. D.	Greenleaf.....	6.9	.....
3006	1986	The City Drug Store	Irving	5.4	.....
3010	1990	C. Coulter	Blue Rapids	4.1	Trace.
3014	1994	W. B. & M. Hawk.....	Beattie	5.2	None.
3021	2001	Central Drug Store.....	Hanover.....	7.1	Present.
3022	2002	J. T. Lewis.....	Hollenberg	7.3	.....
3037	3017	E. J. Clark	Summerfield....	13.9	None.
3053	2033	Taylor & Taylor	Frankfort	6.3	.....
3058	2038	Sharpe Drug Co.....	Bigelow.....	8.1	Present.
3071	2051	St. Louis Berges Pharmacy.....	Onaga	6.7	.....
3075	2055	Dr. G. E. Schwarz.....	.....	3.3	.....

MISCELLANEOUS.

Lab. No. 2792, Insp. No. 1766. Tincture of Ginger. Clearwater Drug Company, Clearwater. Contains 91.5 per cent. of alcohol. Passed.

Lab. No. 2793, Insp. No. 1767. Beta-Quinol. Clearwater Drug Company, Clearwater. Prepared by Cooper Pharmacy Company, Chicago. Passed.

Lab. No. 2796, Insp. No. 1770. Tincture of Arnica. Van Werden Pharmacy, Wichita. Alcohol found, 54.8 per cent. Rather lighter in color than standard tincture, but apparently genuine.

Lab. No. 2797, Insp. No. 1771. Tincture of Ginger. Van Werden Pharmacy, Wichita. Alcohol found, 58.7 per cent. This preparation contains less alcohol than the official tincture, the standard of which is about — per cent.

Lab. No. 2799, Insp. No. 1773. Bay Rum. I. W. Morgan, Wichita. Contains about 48 per cent. of alcohol. Passed.

Lab. No. 3801, Insp. No. 1775. Whiskey. I. W. Morgan, Wichita. Contains 54.7 per cent. of alcohol. Passed.

Lab. No. 2806, Insp. No. 1780. Bay Rum. May Bros., Andale. Contains 49 per cent. of alcohol. Passed.

Lab. No. 2807, Insp. No. 1781. Clark's Rock Candy Cordial. May Bros., Andale. Prepared by Colburn, Birks & Co., Peoria. Sample contains 31.4 per cent. of alcohol. This preparation is claimed to be a remedy for colds, hoarseness, tightness in the lungs, the first stages of consumption, and all pulmonary complaints; also claimed to "relieve promptly coughs, colds and consumption." Contains cane-sugar, glycerin, whiskey, and very little else.

Lab. No. 2812, Insp. No. 1786. Sherry Wine. J. F. Baehr, Contains 19.4 per cent. of alcohol. Passed.

Lab. No. 2815, Insp. No. 1789. Magic Hair Tonic. Western Specialty Company, Wichita. This preparation has a reddish color and contains 4.3 cc. of absolute alcohol, and 4.2 grams of common salt (NaCl) in each 100 cc. Contains practically no organic matter, or other inorganic matter.

Lab. No. 2822, Insp. No. 1799. Whiskey. Wichita Drug Company, Wichita. Contains 43.9 per cent. of alcohol. Passed.

Lab. No. 2824, Insp. No. 1801. Elixir of Pepsin, Bismuth and Calisya. Wichita Drug Company, Wichita. This preparation contains 16.7 per cent. of alcohol, only a trace of bismuth and cinchona alkaloids. It has about as much therapeutic value as an equivalent amount of wine.

Lab. No. 2835, Insp. No. 1812. Whiskey. The Gem Pharmacy, Wichita. Sample contains 48.9 per cent. of alcohol. Passed.

Lab. No. 2836, Insp. No. 1813. Whiskey. G. P. Fry, Wichita. The sample contains 54.4 per cent. of alcohol. Passed.

Lab. No. 2843, Insp. No. 1820. Solution of Carbolic Acid. Jett-Wood Grocery Company, Wichita. Manufactured by the Thompson-Taylor Spice Company, of Chicago. Sample contains 7.6 per cent. of phenol.

Lab. No. 2844, Insp. No. 1821. Tincture of Arnica. Jett-Wood Grocery Company, Wichita. Manufactured by the Thompson-Taylor Spice Company, Chicago. The sample contains 21.5 per cent. of alcohol, the presence of which is not declared on the label. The preparation has not the characteristics of a genuine sample. It is evidently an old sample.

Lab. No. 2846, Insp. No. 1823. U. S. P. Spirit of Nitrous Ether. Jett-Wood Grocery Company, Wichita. Manufactured by the Thompson-Taylor Spice Company, Chicago. This preparation is very acid and contains less than 0.23 per cent. of ethyl nitrite. The

U. S. P. spirit of nitrous ether should contain 4 per cent. of ethyl nitrite. Illegal.

Lab. No. 2849, Insp. No. 1826. Tincture of Arnica Wichita Wholesale Grocery Company, Wichita. Manufactured by the Thompson-Taylor Spice Company, Chicago. The alcoholic content is declared to be 25 per cent. The sample contains 17.9 per cent. of alcohol. It is artificially colored and has not the alcoholic strength nor the characteristics of a genuine tincture of arnica. Illegal.

Lab. No. 2850, Insp. No. 1827. Taylor's Concentrated Essence of Jamaica Ginger. Wichita Wholesale Grocery Company, Wichita. Manufactured by the Thompson-Taylor Spice Company, Chicago. Contains about 37.5 per cent. of alcohol. It has a vinous odor and is adulterated with capsicum. Illegal.

Lab. No. 2875, Insp. No. 1857. Lime Water. F. B. Snyder, Wellington. Sample contains 0.165 per cent. of calcium hydroxide. Sample is not entirely free from sediment.

Lab. No. 3033, Insp. No. 2013. Acetic Acid. Axtell Drug Company, Axtell. Sample contains 35.6 per cent. of absolute acetic acid.

Lab. No. 2941, Insp. No. 1921. Lime Water. Bunker & Fretz, Arkansas City. Sample contains 0.165 per cent. of calcium hydroxide and contains no sediment.

Lab. No. 3043, Insp. No. 2023. Lime Water. Eagle Drug Store, Goff. Sample contains 0.107 per cent. of calcium hydroxide, which is below standard. Sample is also very turbid.

Summary of Vital Statistics.

The report of vital statistics this month shows an increase of tuberculosis reported in forty-three cases, and an increase of twenty deaths. This would seem to indicate that more physicians were reporting their cases of tuberculosis. With the new law about to go into effect, making the report of tubercular cases compulsory, it is believed that many new cases will be brought to light.

Typhoid fever, while showing six less than a year ago, also shows four more deaths, the percentage of mortality being almost double that of a year ago.

Diphtheria also shows a slight increase in the number of cases, but one less death.

Scarlet fever shows a substantial reduction of fifty less than a year ago.

There have been many cases of smallpox throughout the state the past few months. According to the report of the United States Public Health and Marine Hospital Service in February, Kansas had the third largest number of cases in the United States, Illinois and Utah both having more. In March, however, Kansas had gone to the second place, with only Illinois leading. The current month shows a decrease of 256 cases from a year ago, with only one death.

Measles, however, have been very prevalent over the state during the last month, there being 1006 cases—almost double the number a year ago. Attention should be directed to the mortality from measles, eighteen deaths being reported last month; or almost two per cent. of the cases are fatal. The resulting sequela often following measles, with the above mortality, should awaken health officers to the necessity of a closer surveillance of this disease, which is much more to be dreaded than the present mild smallpox.

The Printers' Home and Tuberculosis Sanatorium.

The Union Printers' Home, Colorado Springs, Colo., was established and is maintained by the International Typographical Union of North America.

The Home was dedicated May 12, 1892. It consists of a Home for aged and infirm members and a sanatorium devoted exclusively to the treatment of tuberculosis.

The Home and Sanatorium has an ideal location. It is situated on a high plateau, above the noise and activities of the city. Climatic conditions and interesting surroundings make outdoor life healthful and attractive.

The grounds are extensive (eighty acres) and are laid out in

lawns and walks, with beautiful flower-gardens, shrubs, trees, etc. The physical value of the grounds, buildings and equipment is close to \$750,000.

The institution is under the direction of a board of trustees, elected by the members of the International Typographical Union. It is managed by a superintendent and matron. The medical department is directed by a physician, assisted by skilled nurses.

The Sanatorium buildings are twenty-two in number, the hospital building, solarium and twenty tents, having a total capacity of sixty. The Sanatorium building embraces kitchens, dining-rooms, sun-porches, and individual sleeping-rooms and baths. The building is surrounded by spacious verandas.

The tents are octagonal, have a special system of ventilation, are steam-heated and provided with electric lights and call-bells, furnishing instant communication with the management and the nurses.

The Solarium or sun-house is for the use of the tent patients. It is provided with lavatories and baths, and has a commodious sitting-room, suitably furnished.

Eligibility for admission to the institution is based on five years' continuous membership in a subordinate union of the International Typographical Union.

Residents of the Home are exempt from all expense. They are provided with food, clothing, laundry—in fact, all necessities.

The Home has its laundry, a dairy, and raises its poultry and vegetables, the last items insuring pure foods.

In connection with the laundry is a sterilizing plant, through which all table and bed linen and patients' clothing are passed before they are received in the laundry proper.

During the past four years the Home has made acknowledged progress in the treatment of tuberculosis. Previous to that time, the idea of the institution was to provide only a home for the patients. Four years ago the tents were installed and assigned to patients in the first stages of tuberculosis.

Satisfactory results have been secured from the open-air treatment. Patients are encouraged to spend twenty-four hours in the tents and out of doors.

Particular attention is given to diet.

Patients in all stages of tuberculosis are received at the Home, fifty per cent. of them, unfortunately, beyond the hope of recovery. Patients in the first stages are segregated from the more advanced cases. During the past four years the Home has treated 201 cases. Of these eighty have vacated, the patient then showing good form.

In view of the fact that fifty per cent. of the Home's patients are incurables, the results achieved are encouraging. Under the policy of the institution incurables are admitted, in the belief that every member of the organization should have opportunity for the longest lease of life.

Tuberculosis is prevalent among printers. Statistics show that 500 printing-office workers die every year from this disease, and the International Typographical Union is keenly alive to the importance of preventing and curing it, and is using every means to advance that end. They are vitally interested in the movement for the prevention of tuberculosis, and are doing their part in disseminating the best thought and making public the best methods that tend toward the attainment of this object.

Mosquitos.

Mosquitos cannot breed without water, and in order for them to breed in water it must be permitted to stand for about ten days. Shallow pools that are exposed to sunlight dry up in a short time and are not dangerous, but pools of water that are shaded and do not rapidly evaporate are the ones that cause a great deal of trouble.

Mosquitos seldom breed in large bodies of water; they prefer small pools, rain-water that has collected in tin cans or buckets, cesspools, rain-barrels, broken bottles, cellars that have water standing in them, badly drained roofs and leaders which permit water to collect in the sagging parts without running off.

A single old bucket or tomato-can left with water standing in it, or left so that it may be filled with rain-water, is capable of furnishing a sufficient number of mosquitos to make the surrounding block miserable.

Every citizen can easily, and without the expenditure of money, assist materially in exterminating these pests, by the spending of a few minutes after every rain-storm in an inspection of the premises to see that all possible receptacles or conditions on the premises that might permit water to collect are immediately removed.

Most of our mosquitos are local, and remain during their lives near the place of their birth.

Can you not spare the time to see that on your property, at least, there will be no place for these dangerous and annoying insects to breed?

Besides being carriers of disease (malarial fever and yellow fever) they drive us into the house on a summer evening, or else we must

run the risk of losing a portion of our good red blood, being tattooed with red blotches, and possibly be infected with germs of a serious disease. It is worth your while to help in the warfare of extermination on the mosquito and the fly.

The Rat Problem.

The *Monthly Bulletin* of the New York State Department of Health in a recent issue has the following instructive article on this problem:

"The rat has been for so long looked upon as an inevitable pest that the general public regard him as part of the scheme of things and, like the poor, 'always with us.' His depredations do not apparently affect the bulk of the population, which, habitually indifferent to evils beyond its immediate notice, allows a serious danger to exist undisturbed.

"The rat, however, is something more than an undesirable household pest, terrifying to the timid and apt to become a nuisance by dying and decomposing under floors and behind wainscots.

"Experiment has apparently proved that the rat in confinement cannot live on a cent's worth of food a day, even if of the cheapest

and bulkiest kind, and that several rats confined together in a cage and fed at this rate become mutually cannibalistic. Trichinosis and plague seem to owe their epidemic prevalence entirely to the rat, which in the former case acts as the intermediate host of the *Trichina spiralis*, while in the case of the plague, the rat flea absorbs the plague from the infected rat and in turn inoculates human beings. A report of a diphtheria epidemic at the hospital for the insane at Middletown, Conn., indicates that the rat can be a large factor in transmitting other communicable diseases.

"The most effective method of getting rid of rats seems to be the use of one of the bacteriological poisons, particularly Neumann's virus or Danysz's virus, which sets up a communicable disease among rats from which they quickly die in the open air and away from their haunts. In England whole islands and villages have been cleared of rats by distributing bread dipped in a bacteriological broth near their runs. The advantage of these poisons is that they are harmless to humanity and domestic animals.

"A very interesting account of these new rat poisons and their use was printed in the January issue of *Technical World*."

The Young Mother and the Fat Hog.

The last two legislatures have refused and neglected to pass the measure presented to those bodies providing for the erection and maintenance of a sanatorium for the care and treatment of the state's

tubercular poor. Dr. J. N. Hurty, secretary of the Indiana State Board of Health, seems to have had a similar experience in his state, which has stirred his versatile pen to write the following story, which he declares is "not a fable, but simply straight goods":

"One time a little mother, who was only twenty-five years old, began to feel tired all the time. Her appetite had failed her for weeks before the tired feeling came. Her three little girls, once a joy in her life, now became a burden to her. It was 'Mamma,' 'Mamma,' all day long. She never had noticed these appeals until the tired feeling came. The little mother also had red spots on her cheeks and a slight, dry cough. One day, when dragging herself around, forcing her weary body to work, she felt a sharp but slight pain in her chest, her head grew dizzy, and suddenly her mouth filled with blood. The hemorrhage was not severe, but it left her very weak. The doctor she had consulted for her cough and tired feeling had said: 'You are all run down; you need a tonic.' For a fee he prescribed bitters made of alcohol, water and gentian. This gave her false strength for a while, for it checked out her little reserve. When the hemorrhage occurred, she and all her neighbors knew she had consumption, and the doctor should have known it and told her months before.

"Now she wrote to the state board of health, and said: 'I am told that consumption in its early stages can be cured by outdoor life, continued rest, and plenty of plain, good food. I do not want to die. I want to live and raise my children to make them good citizens. Where can I go to get well?' The reply was: 'The great Christian state of Indiana has not yet risen to the mighty economy of saving the lives of little mothers from consumption. At present the only place where you can go is a grave. However, the state will care for your children in an orphans' asylum after you are dead, and then in a few years a special officer will be paid to find a home for them. But save your life—never!' 'That is a cranky idea,' for a member on the floor of the sixty-fifth assembly said so. 'Besides,' said he, 'it isn't business; the state can't afford it.' So the little mother died of the preventable and curable disease, the home was broken up, and the children were taken to the orphans' asylum.

"A big, fat hog one morning found he had a pain in his belly. He squealed loudly, and the farmer came out of his house to see what was the matter. 'He's got the hog cholry,' said the hired man. So the farmer telegraphed to Secretary Wilson, of the United States Department of Agriculture (who said the other day he had 3000 experts in animal and plant diseases), and the reply was: 'Cert, I'll send you a man right away.' Sure enough, the man came. He said he was a D. V. S., and he was, too. He had a government syringe and a bottle of government medicine in his hand-bag, and he went for the hog. It got well. It wasn't cranky

for the government to do this, and it could afford the expense for the hog could be turned into ham, sausage, lard, and bacon.

"Anybody, even a fool, can see it would be cranky for the state to save the life of a little mother, and it could not afford it, either.

"Moral: Be a hog and be worth saving."

Topeka Presbytery and Nostrum Advertising.

At the regular spring meeting of the Topeka Presbytery, held at Gardner, Kan., the Presbytery put itself on record as being opposed to the religious press joining hands with the manufacturers of worthless nostrums and fake appliances in their designs to deceive their readers.

The support of the religious press, which these people have always had, has been the scandal of the American churches for years, and has enabled these vultures to fatten off of those unfortunate afflicted who believe that everything that appears in "their church paper" is true.

Our hats are off to Topeka Presbytery. Rev. S. S. Estey, D. D., introduced the following resolution, which was adopted and started on its way to the General Assembly:

To the Members of Topeka Presbytery, Synod of Kansas:

WHEREAS, There appear in the columns of our church paper and other religious periodicals medical advertisements which are objectionable because of their misleading, deceptive, untrue and fraudulent character; and

WHEREAS, The publication of such advertisements tends to suggest the presence of disease which does not exist, to cause a postponement of early diagnosis and appropriate treatment of many serious maladies, and to injure the physical, mental and moral well-being of many readers who implicitly rely on what they have read in their church paper; and

WHEREAS, These publications, by their course in admitting such advertisements, are subjecting themselves to ridicule, while other periodicals of recognized standing are refusing all medical advertisements; and

WHEREAS, Many of the popular nostrums advertised contain alcohol, opium, chloral or cocaine or other drugs in quantities, the indiscriminate use of which tends to produce drug fiends and inebriates, and thereby to defeat the cause of temperance as presented and advocated by the same paper; and

WHEREAS, Reputable Christian physicians of unquestioned professional standing and eminent qualifications, on whose judgment we must rely on questions of medical character, and whose labor and influence are exerted for the moral and physical betterment of humanity, it is to be observed, are a unit in condemnation of such advertisements; and

WHEREAS, The injuries wrought and evils perpetrated by the practice of charlatans and quacks are recognized only in their fullest by physicians and in part by intelligent laymen; and

WHEREAS, No amount of money received from such advertisements can right these wrongs; therefore, be it

Resolved, That Topeka Presbytery, in regular session assembled, protests against the aforesaid practices of publishers of the church and other religious periodicals; and

Resolved, That the general assembly direct its board of publication, through its agents, to refuse all advertisements of a medical character, unless said advertisements are first approved by the board to be hereinafter named; and

Resolved, That this special board be composed of three physicians, selected by the board of publication for their known high professional standing, eminent qualifications, ripe experience and unquestioned integrity.

Sanitary Regulations in Food and Drug Inspection.

At a meeting of the State Board of Health, held on March 30 and 31, 1909, the following regulations were adopted, under the provisions of senate bill No. 596:

Be it Ruled by the Kansas State Board of Health:

REGULATION 1. The floors, side walls, ceilings, furniture, receptacles, implements and machinery of every establishment or place where foods or drugs are manufactured, stored, sold, offered for sale or distributed, and all cars, trucks and vehicles used in the transportation of food products, shall at no time be kept in an unclean, unhealthful and unsanitary condition; and for the purpose of this regulation, unclean, unhealthful and unsanitary conditions shall be decreed to exist if foods or drugs in the process of manufacture, preparation, packing, storing, sale, distribution or transportation are not securely protected from flies, dust, dirt, and, as far as may be necessary, by all reasonable means from all other foreign or injurious contamination; and if the refuse, dirt, and the waste products subject to decomposition and fermentation incident to the manufacture, preparation, packing, storing, selling, distributing and transporting of food are not removed daily; and if all trucks, trays, boxes, baskets, buckets, and all knives, saws, cleavers and other utensils and machinery used in moving, handling, cutting, chopping, mixing, canning and all other processes are not thoroughly cleaned daily; and if the clothing or hands of operatives, employees, clerks or other persons therein employed are unclean.

REGULATION 2. The side walls and ceilings of every bakery, confectionery, hotel and restaurant kitchen, shall be well plastered, wainscoted or ceiled with metal or lumber, and shall be oil-painted, or kept well lime-washed, and all interior woodwork in every bakery, confectionery, hotel and restaurant kitchen shall be kept well oiled or painted with oil paints and be kept washed clean with soap and water; and every building, room, basement or cellar occupied or used for the preparation, manufacture, packing, storage, sale or distribution of food susceptible to contamination or damage shall have an impermeable floor made of cement or tile laid in cement, brick, oiled wood, or other suitable non-absorbent material, which can be flushed and washed clean with water.

REGULATION 3. The doors, windows and other openings of every food or drug producing or distributing establishment during the fly season shall be

fitted with self-closing screen-doors and wire window-screens of not coarser than 14-mesh wire gauze.

REGULATION 4. Every building, room, basement, or cellar occupied or used for the preparation, manufacture, packing, canning, sale or distribution of food or drugs shall have convenient toilet or toilet-room or rooms where the process of production, manufacture, packing, canning, selling or distributing is conducted. The floors of such toilet-rooms shall be of cement, tile, oiled wood, brick, or other non-absorbent material, and shall be washed and scoured daily. Such toilet or toilets shall be furnished with two separate ventilating-flues or pipes, discharging into soil-pipes, or on outside of the building in which they are situated. Lavatories and wash-rooms shall be adjacent to toilet-rooms, and shall be supplied with soap, running water and clean towels, and shall be maintained in a sanitary condition. Operatives, employees, clerks and all persons who handle the material from which foods or drugs are prepared, or the finished product, before beginning work or after visiting toilet, shall wash their hands and arms thoroughly in clean water.

REGULATION 5. Cuspidors for the use of operatives, employees, clerks or other persons shall be provided whenever necessary, and each cuspidor shall be thoroughly emptied and washed out daily with disinfectant solution, and about five ounces of such a solution shall be left in each cuspidor while it is in use. No operative, employee or other person shall expectorate on the floor or side walls of any building, room, basement or cellar where the production, manufacture, packing, storing, preparation, or sale of any food or drug is conducted.

REGULATION 6. No person or persons shall be allowed to live or sleep in any room of a bakeshop, kitchen, dining-room, confectionery, creamery, cheese factory, or place where food is prepared, served or sold.

REGULATION 7. No employer shall require, permit or suffer any persons to work, nor shall any person work, in a building, room, basement, cellar, or vehicle occupied or used for the production, preparation, manufacture, packing, storage, sale, distribution, and transportation of foods or drugs, who is affected with any venereal disease, smallpox, diphtheria, scarlet fever, tuberculosis or consumption, trachoma, typhoid fever, epidemic dysentery, measles, mumps, German measles (Rothein), whooping-cough, chicken-pox or other contagious disease.

REGULATION 8. Every person or corporation in charge of, or in control of, or in authority over any of the places mentioned by and described in these regulations shall be responsible for the condition thereof, and it shall be his or its duty to see that the provisions of these regulations with reference to the condition, arrangement and conduct of such places are carried out.

REGULATION 9. The chief inspector or deputy inspector or agent or officer of the State Board of Health or any local board of health or police officer of any city shall have full power at all times to enter and inspect every building, room, basement or cellar occupied or used for the production or sale, manufacture for sale, storage, sale, distribution or transportation of foods and drugs, and all utensils, fixtures, furniture and machinery used as aforesaid; and if upon inspection any food or drug producing or distributing establishment, conveyance, employer, operative, employee, clerk, driver, or other person is found to be violating any of the provisions of senate bill No.

596, Session Laws of 1909, or the rules or regulations promulgated thereunder, or if the producing, preparation, manufacture, packing, storing, sale, offering for sale, distribution or transportation of food is being conducted in a manner detrimental to the health of the employees and operatives and to the character or quality of the food or drugs therein being produced, manufactured, packed, stored, sold, distributed or conveyed, the officer or inspector making the examination or inspection shall furnish notice of said violation to the offender, and shall report such conditions and violations to the secretary of the State Board of Health, who shall issue an order in writing to the person or persons in authority at the aforesaid establishment to abate the condition or violation, or make any such improvements as may be necessary to abate them, within the period of five days, or such reasonable time as may be required in which to abate them.

REGULATION 10. The sidewalk display of food products is prohibited unless such products are enclosed in a show-case or similar device which will protect the same from flies, dust, or other contamination; provided, that food products that necessarily have to be peeled, pared or cooked before they are fit for consumption may be displayed on the sidewalk; provided, that in such display the bottom of the container be at least eighteen inches above the surface of the sidewalk; but the sidewalk display of meat or meat products is prohibited.

REGULATION 11. Confectionery, dates, figs, dried fruits, berries, butter, cheese and bakery products while on sale or display are required to be properly screened or covered to effectively protect the same from contamination or damage by flies, dust, vermin, or other means.

BAKESHOP RULES.

REGULATION 12. (a) Rooms in which the dough is mixed and the pastry prepared for baking must be well ventilated, with a good supply of fresh air and light. Walls, ceilings, floors, proof-boxes, pans, kneading-trough and machines must be kept in a clean and wholesome condition. Closets and lavatories must not be directly connected with the working-rooms, and sewerage pipes must not be led through them.

(b) Before beginning work and before preparing and mixing the ingredients, the persons engaged in the work must wash their hands and arms thoroughly in clean water. For this purpose sufficient wash-basins, together with soap and clean towels, must be provided.

(c) Persons employed in the establishment must, while working, wear sufficient clothing.

(d) Persons having contagious or loathsome diseases must not be employed in bakeries.

(e) All windows and doors must be protected from flies.

(f) The supplies of flour must be stored in dry places, where they are protected from all contamination. Water used to coat the bread must be provided fresh every day. The bread and pastry must not be laid on the bare floor.

(g) It is strictly forbidden to sit or lie on any of the tables, shelves, etc., which are intended for use for the dough or baked articles. Chairs and benches in sufficient number must be provided to sit on.

(h) The working-rooms must be furnished with cuspidors, at least one in each room, which must be cleaned daily. Spitting on the floor is forbidden.

Smoking, snuffing, chewing of tobacco, etc., is forbidden in the working-rooms while work is in progress.

(i) The working-rooms must not be used for any purposes other than those strictly connected with the preparing and baking of foods; especially must they not be used as washing-, sleeping- or living-rooms.

(j) Domestic animals must not be kept in the bakeshop.

(k) All barrels, boxes, tubs, pails, casks, kneading-troughs, machines or other receptacles containing food preparations must be kept covered, protecting same from contamination.

(l) These bakeshop rules shall be posted in each working-room.

SLAUGHTER-HOUSE RULES.

REGULATION 13. (a) Every person owning, leasing or occupying any place, room or building wherein cattle, sheep or swine are killed or dressed, or any market, public or private, shall cause such place, room, building or market to be kept at all times thoroughly cleansed and purified, and all offal, blood, fat, garbage, manure or other unwholesome or offensive refuse shall be removed therefrom at least once every twenty-four hours, if used continuously, or, if only used occasionally, within twenty-four hours after using; and the floors of such building, place or premises shall have an impermeable floor, made of cement or tile laid in cement, brick or other non-absorbent material, which can be flushed and washed clean with water, and which shall be approved by the State Board of Health. No blood pit, dung pit, offal pit, or privy well shall remain or be constructed within any such place, room, or building; nor shall swine be kept or fed within 150 feet of the slaughter-house. Doors and windows must be screened to exclude flies, and side walls painted or whitewashed.

(b) Slaughter-houses are required to be kept in a sanitary condition, and unsanitary conditions shall be deemed to exist wherever and whenever any one or more of the following conditions appear or are found, to wit: If the slaughter-house is dilapidated and in a state of decay; if the floors or side walls are soaked with decaying blood or other animal matter; if cobwebs or other evidence of filth or neglect are present; if the drainage of the slaughter-house or slaughter-house yard is not efficient; if maggots or filthy pools or hog-wallows exist in the slaughter-house yard or under the slaughter-house; if storage hides kept in slaughter-house are in pools of filth, or infested with maggots, or giving out vile odors; if the water-supply used in connection with the cleansing or preparing is not pure and unpolluted; or if the odors of putrefaction plainly exist therein; if bones or refuse are not burned or buried; if dead animals are being fed; if carcasses are transported from place to place when not covered with clean, white cloths, or if kept in unclean, bad-smelling ice-boxes, refrigerators or storage rooms.

(c) If the floors of such killing places are found to be in an unsanitary condition by the inspector or health officer, he may require such floors to be constructed of cement or tile laid in cement, or brick, so as to prevent the blood, foul liquid or washings from being absorbed. All new slaughter-houses shall be constructed with cement floor and killing-beds.

Published in the official state paper April 8, 1909.

I hereby certify that the above are the rules and regulations unanimously adopted by the Kansas State Board of Health, March 31, 1909, under the provisions of senate bill No. 596, Session Laws of 1909.

[SEAL.]

S. J. CRUMBINE, M. D., *Secretary.*

Stop! Look! Listen!

The attention of dealers in food products is respectfully directed to circulars No. 30 and No. 31, recently issued to the inspectors of the food and drugs department:

CIRCULAR LETTER No. 30.

**KANSAS STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, May 12, 1909.**

Inspectors for the Food and Drugs Department:

GENTLEMEN—The season is here when particular attention should be given to the inspection of eggs coming into the local markets of the state.

Section 7, subdivision *sixth*, under "Foods," provides that: "If it (the food product) consists in whole or in part of a filthy, decomposed, tainted or putrid animal or vegetable substance, it shall be considered adulterated." This clearly covers the matter of tainted or rotten eggs, and any person or persons, whether farmer or dealer, who sells or offers for sale tainted or rotten eggs is liable to the penalties for selling adulterated foods.

I request that wherever possible you secure evidence of the violation of the law in this regard, and it is the purpose of the department to prosecute to the fullest extent all such violations that come to our notice.

It is said that there is a quarter of a million dollars worth of stale, tainted or rotten eggs sold in the Kansas markets annually, the larger share of which must come out of the pockets of the consumer. It is the duty of all interested parties to see that this enormous economic waste be eliminated.

Very truly yours, **S. J. CRUMBINE, M. D.,**
Chief Food and Drug Inspector.

CIRCULAR LETTER No. 31.

**KANSAS STATE BOARD OF HEALTH,
DEPARTMENT OF FOOD AND DRUGS,
TOPEKA, May 15, 1909.**

To the Food and Drug Inspectors:

GENTLEMEN—There has recently been examined in the food laboratory a quart can of pickles, put up in dilute vinegar, which can had the usual zinc top, into which is set a porcelain or glass protection. The pickles in this can had caused sickness in two members of a family.

Upon examination the pickles were found to contain 0.125 per cent. of metallic zinc, or in the whole can 53.5 grains of crystallized zinc acetate, which would account for the cases of sickness.

It is held, therefore, that all food products put up in any material of an acid nature and contained in jars with zinc tops are illegal, in that there will sooner or later be added to such product a poisonous quantity of zinc, detrimental to the health of the consumer.

Official samples of such products should be sent to the laboratory for examination. Very truly yours, **S. J. CRUMBINE,**

Chief Food and Drug Inspector.

Proprietaries Classed as Liquors.

Commissioner Capers, of the Bureau of Internal Revenue, has issued a statement to collectors of internal revenue, under date of July 1, in which he says:

Continuing the list of alcoholic medicinal preparations for the sale of which special tax is required, published in Circular 713 (T. D. 1281), of December 3, 1907, herewith is given a list of similar preparations, analyzed and passed upon since the date of said circular.

You are also informed that the formula for the manufacture of Dick's Nutritive Elixir, listed on Circular 713, has been modified, and that special tax is not required for the sale, for medicinal use, of the preparation bearing a label showing that it was manufactured subsequent to May 5, 1908.

Your attention is again called to the fact that Circular 713 and the list here given comprise all the preparations which have been analyzed and classed as insufficiently medicated, not including those at one time so held but the manufacture of which has been discontinued or the formula changed.

No action should therefore be taken looking to the collection of special tax for the sale of any medicinal preparation the name of which is not found on one of the published lists until this office has been communicated with and definite instructions received as to the classification of the suspected article. This direction is given only for the purpose of avoiding the collecting or demanding of tax on articles which have been classed by this office as medicinal or might be so classed on examination, and is not to be construed as a change in the attitude of this office regarding articles, properly classified as liquors, sold under the guise of medicines. Samples of preparations suspected of being of this character should be taken whenever found and forwarded to this office for analysis:

American Alimentary Elixir.
Aromatic Bitters.
Bismarck Laxative Bitters.
Bismarck's Royal Nerve Tonic.
Blackberry (Karles Medicine Company).
Blackberry Cordial (International Extract Company).
Blackberry Cordial (Irondequoit Wine Company).
Blackberry Cordial (Strother Drug Company).
Blackberry and Ginger Cordial (Standard Chemical Company).
Black Tonic.
Bradenberger's Colocynthis.
Brown's Utryme Tonic.
Celery Pepsin Bitters.
Clifford's Peruvian Elixir.
Crescent Star Jamaica Ginger.
Coca Wine.
Calisaya.
Colasaya.

Dr. Brown's Blackberry Cordial.
Dr. Brown's Tonic Bitters.
Dr. Hopkins' Union Stomach Bitters.
Dr. Hoffman's Golden Bitters.
Dr. Sterki's Ohio Bitters.
Dubonnet.
Dubonnet Wine.
Elixir of Bitter Wine (Pleasant Tonic Bitters Company).
Elixir Calisaya.
Eucalyptus Cordial.
Ferro China Bascal.
Ferro China Bissler.
Ferro Quina Bitters.
Fine Old Bitter Wine.
Gastrophan.
Gentian Bitters.
Genuine Bohemian Malted Bitter Wine Tonic.
Glycerine Tonic (Elixir Pepsin).
Greiner's Blackberry Cordial.
Health Bitters.

Herbton.
Herbs Bitters.
Jack Pot Laxative Bitter Tonic.
Jarvis Blackberry Brandy.
Juniper Kidney Cure.
Karlsbader Stomach Bitters.
Kola and Celery Bitters.
Kola Wine.
Kreuzberger's Stomach Bitters.
Lee's Celebrated Stomach Bitters.
Mikado Wine Tonic.
Milburn's Kola and Celery Bitters.
Miod Honey Wine.
Neuropin.
Newton's Nutritive Elixir.
O'Hare's Bitters.
Old Dr. Jacques' Stomach Bitters.
Our Ginger Brandy.

Ozark Stomach Bitters.
Pepsin Stomach Bitters.
Peptonic Stomach Bitters.
Pioneer Ginger Bitters.
Quinquina Dubonnet.
Rimsovo Malto-Sove Vino Chino.
Severas Stomach Bitters.
Sirena Tonic.
Smart Weed.
Steinkonig's Stomach Bitters.
St. Raphael Quinquina.
Strauss Exhilarator.
Tatra.
Tolu Rock and Rye.
True's Magnetic Cordial.
White's Dyspepsia Remedy.
Zeman's Medicinal Bitter Wine.

Fletcherize.

Once a man with poor digestion
Ate some cork and carpet tacks,
Ate two lobsters without question,
Ate some tripe and sealing-wax;
Ate of pickles by the quart, sir;
Ate of crabs an even score;
And when all supplies ran short, sir,
Still was clamorous for more.
Did it hurt him? No, it cured him;
You may do as he did, too;
Mr. Fletcher had assured him
Of the virtue in a chew.
Chew the oysters, chew the chowder,
Chew the fish and chew the meat,
Chew the smallest crumb to powder,
Chew up everything you eat;
Chew boiled rice and chew the curry,
Chew the pudding, chew the sauce,
Chew them slowly, never hurry;
Chew, for time is only dross.
Chewing's good for what may ail you,
Cures rheumatism, cures the gout;
Chew, and health will never fail you
While your jaws and teeth hold out.
—*Manchester Guardian.*

KANSAS IN ONE SENTENCE.

Kansas—a land of smiling sunshine, of winding streams, and waving corn, and happy homes; Where you have but to tickle the soil to make it laugh a harvest;

A land dotted with schoolhouses, and growing towns and villages that call themselves "cities"—this by divine right, for they have the prophetic outlook, and to-morrow will be what they to-day think they are;

A land of sensitive souls, where nothing is good enough, but must be better; where nothing ever is, but all things are becoming;

A land of ideas and themes and white-light thoughts, caused by ozone in excess and Kosmic kilowatts to spare;

A land so rich in wealth that one should reach it direct from Massachusetts in order to know by contrast its marvelous possibilities;

A land of pigs given to adipose, of sleek cattle, of strong horses, of handsome women, of bouncing babies, of homely, rugged men with individuality plus, who feel deeply and write vividly—who dip their pens in honey or gall or muriatic acid, whichever is handiest;

A land where hens lay lavishly and cackle in proportion, where mules gambol on the green and are not ashamed of their pedigree;

A land where no one dies except through accident or overeating—the geographical center of the United States, the center of the thought zone:

Generous, live, alert, happy, prosperous Kansas, where I once left my pocketbook under my pillow in an Atchison hotel, and did not miss it until I got on board the train, when I asked the first man I met—a stranger—to loan me five dollars: "Make it ten," said he, and handed me out a sawbuck with the gratuitous advice, "If there is any change, get your hair cut";

A land whose finest products are its young men and women, with their superb physical health, their proud ambition, their high appreciation, their capacity for useful work and their right intent;

A land where there is so much that is noble and pure and true and beautiful and good that if men in Kansas occasionally lapse, God in love and pity engages Gabriel in conversation, points to the Pleiades, looks the other way and forgets it—happy, prosperous, smiling Kansas.

—ELBERT HUBBARD.

BULLETIN

OF THE

Kansas State Board of Health.

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No. 6.

JUNE, 1909.

VOL. V.

The number of deaths during the four years of the Civil War was 205,070. During the past four years 800,000 deaths have resulted from tuberculosis alone in the United States.

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VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

Allen	6	6	1	1	0	0	1	0	5	0	30	0
Anderson	0	0	0	0	2	1	0	0	0	0	1	0
Atchison	0	0	2	0	3	1	3	0	0	0	0	0
*Barber	1	0	0	0	0	0	2	0	0	0	1	0
Barton	2	2	0	0	2	0	0	0	0	0	0	0
*Bourbon	0	0	0	0	0	0	0	0	0	0	1	0
Brown	6	0	0	0	0	0	0	0	0	0	1	0
Butler	0	0	0	0	0	0	0	0	0	0	1	0
Chase	0	0	0	0	0	0	0	0	0	0	1	0
Chautauqua	0	0	0	0	0	0	0	0	3	0	0	0
Cherokee	3	3	0	0	3	2	0	0	1	0	0	0
Cheyenne	0	0	1	0	0	0	4	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	1	0
Clay	0	0	0	0	0	0	1	0	0	0	0	0
*Cloud	0	0	0	0	0	0	0	0	1	0	1	0
Coffey	0	0	0	0	0	0	0	0	0	0	0	0
*Comanche	0	1	0	0	0	0	0	0	14	0	0	0
Cowley	6	6	0	0	4	2	0	0	20	0	24	0
Crawford	0	0	0	0	2	0	0	0	0	0	22	0
Decatur	0	0	0	0	1	0	1	0	1	0	3	0
Dickinson	0	0	0	0	0	0	1	0	15	0	6	0
Doniphan	0	0	0	0	0	0	0	0	0	0	0	0
Douglas	3	3	1	1	3	0	4	1	1	0	73	1
Edwards	0	0	0	0	0	0	0	0	0	0	8	0
Elk	3	1	0	0	0	0	2	0	1	0	1	0
Ellis	0	0	1	0	1	0	0	0	0	0	0	0
Ellsworth	1	1	0	0	0	0	0	0	0	0	1	0
Finney	2	0	0	0	1	1	0	0	0	0	0	0
Ford	1	0	0	0	0	0	0	0	0	0	0	0
Franklin	1	1	0	0	0	0	0	0	5	0	0	0
Gear	0	0	0	0	0	0	2	0	4	0	2	0
Gery	0	0	0	0	0	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	3	1	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	2	0
Gray	1	1	0	0	0	0	4	0	0	0	1	0
*Grealey	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood	0	0	0	0	0	0	0	0	3	0	1	0
*Hamilton	0	0	0	0	0	0	1	0	0	0	3	0
Harper	0	0	0	0	0	0	0	0	0	0	2	0
Harvey	0	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	0	0
Jackson	0	0	2	0	0	0	0	0	14	0	0	0
Jefferson	1	1	0	0	1	0	0	0	2	0	1	0
Jewell	2	0	0	0	4	0	0	0	6	0	27	0
*Johnson	1	0	1	0	0	0	0	0	1	0	0	0
Kearny	0	0	0	0	0	0	0	0	0	0	11	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labetts	3	0	2	0	0	0	1	0	0	0	3	0
Lane	0	0	0	0	0	0	3	0	0	0	0	0
Leavenworth	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	1	0	0	0	0	0	0	0
Linn	0	4	2	1	3	2	0	0	0	0	3	0
*Logan	0	0	0	0	1	0	36	0	27	0	20	0
Lyon	1	0	0	0	3	0	0	0	0	0	20	0
Marion	0	0	0	0	0	0	0	0	150	0	3	0
Marshall	0	0	0	0	0	0	0	0	0	0	0	1
McPherson	3	3	0	0	0	0	1	0	0	0	2	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	2	0	1	1	0	0	0	0
*Miami	0	0	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	0	0	0	0	5	0	0	0	40	0
Montgomery	0	0	2	0	1	0	0	0	2	0	4	0
*Morris	0	0	0	0	0	0	0	0	0	0	0	0
*Morton	0	0	0	0	0	0	0	0	0	0	0	0
*Nebraska	0	0	0	0	0	0	0	0	0	0	0	0
*Neosho	0	0	0	0	0	0	0	0	0	0	0	0
Ness	0	0	0	0	0	0	1	0	0	0	0	0
*Norton	0	0	0	0	0	0	0	0	0	0	0	0
Osage	2	2	0	0	0	0	1	0	16	0	5	1
Osborne	1	1	0	0	0	0	0	0	9	0	0	0
Ottawa	1	1	0	0	0	0	0	0	3	0	10	0
Pawnee	0	0	0	0	0	0	2	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	1	0	0	0
Pottawatomie	0	0	0	0	0	0	0	0	6	0	0	0
Pratt	0	0	0	0	0	0	0	0	5	0	14	0
Rawlins	0	0	0	0	0	0	0	0	13	0	1	0
Reno	0	0	0	0	1	0	7	0	0	0	15	0
Republic	0	0	0	0	0	0	1	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	0	0	0	0	0	0	0	0	7	0	3	0
Rooks	0	0	0	0	0	0	2	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	0	0	2	0
Russell	0	0	0	0	0	0	0	0	1	0	0	0
Saline	2	2	0	0	0	0	1	0	2	0	0	0
Scott	0	0	0	0	0	0	0	0	0	0	7	0
Sedgwick	3	2	1	0	0	0	18	0	11	0	283	0
Seward	1	0	0	0	0	0	0	0	0	0	0	0
Shawnee	1	1	0	0	0	0	0	0	8	0	4	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
Smith	1	1	0	0	0	0	0	0	11	0	0	0
Stafford	0	0	0	0	0	0	5	1	0	0	12	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	14	0
Sumner	3	2	3	0	0	0	0	0	3	0	48	2
Thomas	1	1	0	0	0	0	0	0	1	0	0	0
*Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	0	0	6	0	20	0
Wallace	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	3	1	0	0	0	0
Wichita	0	0	0	0	5	1	0	0	0	0	0	0
*Wilson	0	0	0	0	0	0	0	0	0	0	0	0
Woodson	1	0	0	0	3	1	0	0	0	0	0	0
Wyandotte	0	0	0	0	1	0	0	0	4	0	1	0
Cities:												
Atchison	1	1	0	0	0	0	8	0	0	0	0	0
Coffeyville	2	1	1	0	0	0	0	0	0	0	0	0
Fort Scott	1	1	1	1	0	0	0	0	0	0	0	0
Kansas City	1	12	6	0	8	0	8	0	29	0	108	0
Leavenworth	4	2	1	0	2	0	0	0	0	0	7	0
Parsons	1	1	0	0	0	0	0	0	7	0	1	0
Pittsburg	0	3	0	0	3	1	1	0	4	0	47	0
Topeka	0	0	0	0	6	0	2	0	23	0	69	0
Wichita	2	0	0	1	1	0	8	1	15	0	179	2
State Institutions,	2	4	0	0	0	0	0	0	0	0	0	0

* No report.

According to a report of the United States census, it is stated that the mortality of the Indians from tuberculosis is undoubtedly far higher than that of either the whites or the negroes, although it is believed by careful investigators that the disease was entirely absent before the advent of the whites in America.

DRUG ANALYSES No. XX.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STIRLING, Microscopist.

LAWRENCE, KAN., June 15, 1909.

The twentieth report of drug products sent to this laboratory by the Board of Health inspectors, which embraces a number of samples of spirits of camphor, tincture of iodine, essence of peppermint, and some proprietary articles, is submitted.

It should be stated that some effort has been made during the last month to introduce into the Kansas drug markets an article for external use which contains wood alcohol—this wood alcohol, furthermore, being of an impure variety, or the unpurified methyl alcohol—the argument being that this menstruum in local application was especially valuable on account of the products from the destructive distillation of wood. Many statements were made in support of the argument that wood alcohol was not only harmless but actually beneficial in local applications.

As there seems to be on the part of some chemists, and possibly, some physicians, an opinion that this position (taken by some manufacturers of external applications composed of wood alcohol) is tenable, we desire to quote in substance what the National Dispensatory has to say on this subject, on page 134: "Recent investigations point to the danger of using methyl alcohol in liniments and other external remedies." In the United States Dispensatory, on page 1569, the following is found: "Under no circumstances should methyl alcohol be employed by pharmacists as a menstruum."

Recent medical and pharmaceutical literature has been so full of unfavorable editorial comments on the use of wood alcohol that it is a surprise to us that any one should insist on forcing an article on the market against the advice of the two professions and so counter to popular prejudice. In this connection I desire to quote a paragraph from the recent issue of the *Bulletin of Pharmacy*, June, 1909, on page 227:

"There is a statute in Maine providing that any product containing methyl alcohol must bear the word 'poison' in red letters not less than one-fourth of an inch high. Similar laws exist elsewhere, and in at least three or four states the sale of medicinal preparations containing methyl alcohol is entirely prohibited. More important still, a regulation of the national government, made in connection with the food and drugs act, forbids a content of

methylalcohol in any medicinal preparation except it be specified in the Pharmacopœia or National Formulary."

In the June issue of the *National Druggist*, page 165, warning is given against the use of denatured alcohol, the main objection to which, it is evident, is the wood-alcohol content. The article refers to the regulation of the Internal Revenue Department, and the ruling of the acting commissioner against its use medicinally, even for external applications.

Harrington, in his excellent work, "Practical Hygiene," gives the following information on the toxic effects of methyl alcohol:

"The vapors of wood alcohol have within recent years attracted considerable attention by reason of their disastrous effects upon vision. Since 1899 many cases of blindness have been reported in the journals devoted to ophthalmology as due to the vapors and to the internal use of preparations such as essences of ginger, peppermint, etc., which are very commonly made with wood alcohol and extensively consumed in places where the sale of liquor is prohibited. When wood alcohol, as such, is consumed, as it often is with fatal results, it will be noted that the victims are generally quite blind before death approaches. Würdemann has reported a case of wood-alcohol blindness due to the inhalation of fumes from varnish. The subject was a moderate user of tobacco and stimulants, whose sight had always been good. After working six days he was obliged to quit work on account of nausea, dizziness, and severe frontal headache. On the following day he had dimness of sight, and then became totally blind for twenty-four days, when his sight began to improve. In another case, reported by Patillo, and quoted by Würdemann, the material worked with was the same, and total blindness occurred on the sixth day. This lasted a week, then sight improved, but in two weeks it began again to fail. Inhalation of vapor is believed to cause retrobulbar neuritis, producing partial atrophy of the optic nerve, especially of the central fibers."

Lab. No. 2685, Insp. No. 1657. Osborne's Hydrogen Peroxide. Custer Chemical Company, New York. Residue from 20 cc.; 0.029 gms. Sample contains 9.5 volumes of available oxygen. Passed.

Lab. No. 2850½, Insp. No. 1828. Famous Prescription 100,384. Prepared by Wm. H. Muller, New York. Claimed to cure rheumatism and gout; to be entirely vegetable. Contains potassium iodide, colchicine and aromatics.

Lab. No. 2858, Insp. No. 1839. Toris Compound. Globe Pharmaceutical Company, 124 East Ohio street, Chicago, Ill. A remedy for rheumatism, blood diseases, coughs and colds, when combined with whiskey (1½) and compound syrup of sarsaparilla. Contains granulated sugar, sodium salicylate and potassium nitrate.

SPIRITS OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Grams of camphor in 100 cc. of spirit.	Remarks.
3027	2007	John L. Clark.....	Seneca.....	9.00	
3029	2009	H. B. Jenkins.....	.....	8.00	Water added, 26.6 %.
3034	2014	A. A. Piekenpaugh.....	Baileyville.....	6.30	Water added, 10.24 %.
3046	2026	J. S. Fitzgerald.....	Wetmore.....	8.10	
3048	2028	D. H. Fitzgerald.....	Kelly.....	9.60	
3039	2029	C. H. Bonjour.....	Centralia.....	9.40	
3050	2030	City Drug Store.....	Vermilion.....	9.20	
3052	2032	Dr. J. C. Maxson.....	Corning.....	4.84	
3055	2035	B. T. Spradling.....	Frankfort.....	5.70	Water added, 12.2 %.
3059	2039	G. Bishop.....	Blaine.....	12.20	
3060	2040	The Star Drug Co.....	Westmoreland.....	9.40	
3073	2053	R. J. Morton, M. D.....	Green.....	8.50	Water added, 9.34 %.
3077	2057	Newman Bros.....	Randolph.....	9.35	
3080	2060	Olzburg Drug Co.....	Olzburg.....	11.70	
3082	2062	Reed & Sons.....	Soldier.....	9.10	
3084	2064	Drs. McManis & Toothake,	Havensville.....	17.46	
3085	2065	Chas. E. Little.....	Circleville.....	12.60	
3098	2078	M. L. Trudell.....	North Cedar.....	9.06	
3100	2080	L. M. Wirts.....	Dennison.....	10.80	
3102	2082	A. B. Carter.....	Valley Falls.....	7.46	Alcohol declared, 86 %. Water added 23.6 %.
3107	2087	McDaniel Drug Co.....	Valley Falls.....	9.40	

Lab. No. 2992, Insp. No. 1972. Citrox. United Citrox Company, Detroit, Mich. For external application in the treatment of eczema, tetter, ringworm and other scaly skin diseases. In stubborn cases a preparation called Zemox is used in conjunction with Citrox. Citrox was found to be largely sodium hyposulfite.

Lab. No. 2993, Insp. No. 1973. May-a-Tone (face dressing), Mayatone Company, Detroit, Mich. Found to be largely magnesium sulfate, perfumed and tinted pink. The contents of the package weighs about 2½ ounces. It is dissolved in about 8 ounces of witch-hazel, applied, followed by massage.

Lab. No. 3030, Inspection No. 2010. Label, Cholerine (liquid food for fowls). Germa Manufacturing Company, Sedalia, Mo. Guaranteed to cure and prevent cholera, roup and gapes. Sample contains sulfuric acid (3 per cent.), sulfate of iron and powdered sassafras bark.

Lab. No. 3031, Insp. No. 2011. Spirits of Peppermint. Label, Tinctura Menthae Piperatae. Crevan's Drug Store, Axtell. Sample contains 7 cc. of oil in 100 cc. of the spirit.

Lab. No. 3036, Insp. No. 2016. Salt of Tartar. I. E. Henry, Summerfield. Sample was put in pasteboard box without protection from moisture. Sample was practically destroyed in transit.

Lab. No. 3078½, Insp. No. 2058½. Label, Ransdell's Poultry Food (Make-em-lay). Ransdell Stock Food Company, Clay Center. Guaranteed to increase the product in healthy flock of poultry from 25 to 50 per cent. The sample contains magnesium sulfate (Epsom salts) and bran.

Lab. No. 3079, Insp. No. 2059. Tincture of Iodine. R. A. W. Lovene, Garrison. Sample contains 6.7 gms. of iodine in 100 cc. of the tincture; potassium iodide is present. Passed.

Lab. No. 3081, Insp. No. 2061. Spirits of Peppermint. Label, Tr. Menth. Pip. Olsburg Drug Company, Olsburg. Sample contains 10.9 cc. of oil in 100 cc. of the spirits. Passed.

Lab. No. 3087, Insp. No. 2067. Spirits of Peppermint. Label, Sp. Menth. Pip. D. W. Collins, Arrington. Sample contains 6.1 cc. of oil in 100 cc. of the spirits. Water is present.

Lab. No. 3088, Insp. No. 2068. Essence of Peppermint. Label, Pure Essence of Peppermint. Manufactured by Hanley & Kinsella, C. & S. Co., St. Louis. Hefty & Reichert, retailers, Half-mound. Sample contains a trace of oil, considerable sediment, and 57.4 per cent. of added water. Retailer did not know how long the essence had been in stock.

Lab. No. 3092, Insp. No. 2072. Essence of Peppermint. Makinson & Brookens, Holton. Sample contains 9.65 cc. of oil in 100 cc. of the essence. Passed.

Lab. No. 3094, Insp. No. 2074. Essence of Peppermint. Naylor Drug Company, Holton, W. W. Naylor, proprietor. Sample contains 4 cc. of oil in 100 cc. of essence, and 21 per cent. added water.

Lab. No. 3096, Insp. No. 2076. Tincture of Iodine. C. E. Rose, Holton. Sample contains 6.82 gms. of iodine in 100 cc. of tincture. Potassium iodide is present. Passed.

Lab. No. 3106, Insp. No. 2086. Essence of Peppermint. Dr. L. H. Burnett, Valley Falls. Sample contains 7.4 cc. of oil in 100 cc. of the essence.

HOT WEATHER DON'TS.

Don't fret—it will only make you warmer.

Don't scold—it will sour your sweetness.

Don't eat too much—you will live longer and it will cost less.

Don't drink ice-cold water—the reaction will make you feel hotter and delay digestion.

Don't buy foodstuffs which have been a roosting or feasting place for flies—you may become infected with a dangerous disease.

The Condition* of Milk Served to Consumers in Kansas—II.*

By FREDERICK H. BILLINGS, Ph. D., and FRANK U. G. AGRELIUS, A. M.,
of University of Kansas.

In any properly conducted campaign against certain infectious diseases, it is advisable to take the conditions of the milk supply into consideration. This is especially true in the case of tuberculosis. Until comparatively recently but little attention has been paid to milk as a carrier of this disease, principally, perhaps, because its germs do not multiply in milk and so do not give rise to sudden and extensive epidemics. The action of the germs in the human body is generally slow and insidious. Primary infection, according to von Behring, takes place early in life, or during the bottle-feeding stage in infancy. In the words of this investigator, "The milk fed to infants is the chief cause of consumption. This statement is true, not because the milk fed to them is at all worse than other milk, but because the human infant, like the young of all other mammals, is destitute of the protective agencies in his alimentary system which at a later period of life prevent the entrance of disease germs into his tissues."

This authority believes that the primary infection of infancy brings about constitutional changes that later make it possible to develop pulmonary tuberculosis through infection from inspired tubercle bacteria. Conditions of life of course assist or hinder the successful invasion of the lung tissues, so that any campaign for fresh air and general hygienic improvement is based on sound principles.

The tubercle bacteria that find entrance into milk gain their access in one of two ways, or in both. First, an animal afflicted with tuberculosis may pass the organisms into the milk while it is still in the udder. This may be accomplished without any clinical evidence of udder disease. The readiness with which milk may thus become contaminated is instanced by a healthy cow that was inoculated with tubercle bacteria, in the shoulder. Seven days later she was discharging the germs into her milk, and continued so to do till her death. Second, the entrance of tubercle bacteria into milk through the udder is probably not so common a source of contamination as through the excrement. A cow swallows the secretions of her mouth, so that if pulmonary tuberculo-

* Investigations made for the State Board of Health.

sis be present the bacteria found in her saliva would ultimately get into and contaminate the feces.

In addition, there is danger from the alimentary tract itself. It is not uncommon for tuberculosis to take the form of lesions on the intestines. If these discharge into the cavity of the tract, much infectious material finally reaches the exterior, where, when dried, it is in condition to gain easy access to the milk-pail of the careless dairyman. Danger is increased by the difficulty of ascertaining whether or not an animal is thus spreading disease germs about the premises which she frequents. It is not at all necessary that a tuberculous cow should be consumptive-looking or show clinical symptoms in order to indicate the presence of disease. It has been abundantly proven that she may be fat and sleek, with every external sign of health, and yet be a source of infection through contaminated excrement.

The method by which tubercle bacteria in excrement find their way into milk will be easily understood by any one who observes the ordinary process of milking. The cow is generally ungroomed, so that her flanks, udder and tail have a considerable amount of dried excrement hanging to them. The agitation due to milking, along with the movements of the animal, are the means of dislodging some of the filth, which may fall into the milk-pail.

It is a difficult matter to determine whether or not a cow is dangerous on account of infected fecal material. In general such a determination is scarcely practicable. If no clinical evidence is available, the only remaining test of value is the tuberculin test. There is a prevalent belief that this method of diagnosis does not distinguish between the animal that has incipient tuberculosis and is as yet harmless and one that is far enough advanced with the disease to be a source of danger. As a result of this belief, there is a conviction that a hardship is wrought by any law that relegates to slaughter a healthy appearing animal that reacts positively to the tuberculin test. If it were possible to determine just when a harmless though tuberculous cow became a source of infection she might with reason be preserved from slaughter till that time. Without the means of attaining this knowledge, there can be but one safe course, and that is to remove all reacting animals as sources of milk supply. In this way only can we ever hope to successfully cope with tuberculosis in dairy stock, and thus strike at one of the most fruitful sources of the white plague in man.

The examination of milk directly for tubercle bacteria is one method of ascertaining the extent to which this food serves as an

agent of dispersal. The evidence of a positive result in such a case would be indisputable, but the evidence of a negative result, though generally accepted as satisfactory, is not so conclusive as the positive. The Kansas State Board of Health, however, wished a test made of a considerable number of samples of milk and butter from Kansas sources, in order to determine the degree of infection with tubercle organisms.

Milk samples were collected in sterile bottles, carried to the laboratory and centrifuged for one hour. An electric centrifuge was used, each arm of which carried a 50 cubic centimeter graduated glass container. Thus 100 cc. of each sample was used in making the test. The cream and sediment containing the majority of the bacteria were removed in sufficient quantity to make 20 cc. Butter samples were first melted in warm water in an incubator (55 grams [50 cc.] of butter with 50 cc. of water) and then shaken vigorously till an emulsion resulted. The mixture was then centrifuged as in the case of milk. The bacteria washed from the butter were precipitated, and the sediment only used, though enough of the supernatant water was used to make up 20 cc. A few ice-cream samples were tested, but as cream formed its main constituent, as in butter, it was thought best to confine the work more particularly to butter and milk.

As guinea-pigs are very susceptible to tuberculosis, they were used for experiment. It was thought best to use four guinea-pigs instead of one to each sample, for the following reasons: (1) Much more milk or butter could be tested; (2) it was anticipated that a considerable number of animals would die from the effect of filth in the samples, so that with four guinea-pigs the chances were against all of them dying prematurely. Each animal was inoculated subcutaneously in the abdominal region with 5 cc. of the centrifuged sample. In this way 20 cc. was inoculated from each sample, while 100 cc. was actually tested. The guinea-pigs were kept in the country under as healthful conditions as possible. Feeding and care were under the supervision of Mr. W. C. White, and it is to his special interest in the investigation that much of the value of the results obtained is due.

After inoculation two months at least were allowed to elapse before tests for tuberculosis were made. Autopsies were considered necessary in case of death short of the two months, provided the animal lived three weeks after inoculation. No attempt was made to ascertain the immediate cause of premature death other than that caused by tuberculosis.

All animals that remained alive at the end of two months were inoculated with 2 cc. of tuberculin, the purpose of such a test being the differentiation of animals infected with true tuberculosis on the one hand and those infected with certain acid-fast organisms that resemble tubercle bacteria in form, and in macroscopic effect on tissues. This method originated with Dr. John F. Anderson, of the United States Public Health and Marine Hospital Service. He ascertained that enough tuberculin could be injected into a guinea-pig to kill it in from six to eighteen hours, provided it had tuberculosis. In any other instance, including infection from other acid-fast bacteria, no reaction would occur. Two cubic centimeters were found by Doctor Anderson to accomplish the purpose.

In the present investigation twenty-four hours were allowed for the tuberculin to act, after which the animal was chloroformed and autopsied. In making *post-mortem* examination the points of inoculation were observed and also the condition of the inguinal, celiac and axillary glands, the spleen, liver and lungs. Smears, cultures and sections were made from organs or tissues that varied from the normal. The cultures were made on Dorset's egg medium, with subcultures on glycerin agar. Sections were made from tissues embedded in collodion and stained by the Ziehl method. The results of the tuberculin inoculations and autopsies are here given in tabulated form.

The effects of inoculation of milk and butter on the bodies of the experimental animals were chiefly of four different sorts, namely, enlargement of the inguinal lymphatics, enlargement of the spleen, suppuration at the points of inoculation, and emaciation. It is believed that in all the instances where these pathological conditions appeared, they could be accounted for by the large number of filth organisms, streptococci or micrococci, found in the samples. It must have been a severe strain upon the defensive mechanism when 5 cc. of bacteria-laden milk, for example, were injected into the tissues.

From the results tabulated above, it will be seen that but two animals succumbed to the inoculation with tuberculin. Failure to find tubercle bacteria present in the tissues of these animals showed their death was not due to tuberculosis. It was probably due to weakened physical condition, as evinced by extreme emaciation.

Smears and cultures yielded acid-fast bacteria in twelve cases. Most of them showed characters morphologically different from those of the tubercle organism. None of them gave evidence of being this organism when grown on culture media.

TRANSMISSION OF TUBERCULOSIS THROUGH KANSAS MILK.

Sample No.	Pig No.	Milk, butter, or ice-cream.	City.	Date of inoculation, 1908-'09.	Date of death, 1908-'09.	Manner of death.	Result of autopsy.
1	1	Milk	Lawrence.....	Oct. 22	Oct. 23	Tuberculin....	Emaciated. Inguinals and spleen enlarged. Spleen and liver with necrotic spots. Smears, sections and cultures negative.
1	2	"	"	Oct. 22	Oct. 26		
1	3	"	"	Oct. 22	Nov. 10		
1	4	"	"	Oct. 22	Jan. 6		
2	1	Ice-cream.....	Lawrence.....	Oct. 27	Jan. 6	Tuberculin.... Chloroform....	Emaciated. Inguinals enlarged. Smears, sections and cultures negative. Normal.
2	2	"	"	Oct. 27	Jan. 6		
2	3	"	"	Oct. 27	Oct. 28		
2	4	"	"	Oct. 27	Oct. 29		
3	1	Butter.....	Tonganoxie.....	Nov. 3	Jan. 7	Chloroform....	Normal.
3	2	"	"	Nov. 3	Jan. 7		
3	3	"	"	Nov. 3	Jan. 7		
3	4	"	"	Nov. 3	Jan. 7		
4	1	Ice-cream.....	Lawrence.....	Nov. 19	Jan. 20	Chloroform....	Normal.
4	2	"	"	Nov. 19	Mar. 5		
4	3	"	"	Nov. 19	Jan. 24		
4	4	"	"	Nov. 19	Jan. 20		
5	1	Butter.....	Fort Scott.....	Nov. 19	Jan. 22	Chloroform....	Normal.
5	2	"	"	Nov. 19	Jan. 22		
5	3	"	"	Nov. 19	Jan. 22		
5	4	"	"	Nov. 19	Jan. 22		
6	1	Milk	Lawrence.....	Nov. 20	Jan. 23	Chloroform....	Normal.
6	2	"	"	Nov. 20	Jan. 23		
6	3	"	"	Nov. 20	Jan. 23		
6	4	"	"	Nov. 20	Jan. 23		
7	1	Milk	Lawrence.....	Nov. 21	Jan. 23	Chloroform....	Normal.
7	2	"	"	Nov. 21	Jan. 23		
7	3	"	"	Nov. 21	Dec. 7		
7	4	"	"	Nov. 21	Dec. 6		
8	1	Milk	Lawrence.....	Nov. 21	Nov. 29	Chloroform....	Inguinals and spleen enlarged. Smears, sections and cultures negative.
8	2	"	"	Nov. 21	Dec. 2		
8	3	"	"	Nov. 21	Dec. 8		
8	4	"	"	Nov. 21	Jan. 23		

9	1	Butter.....	Lawrence.....	Nov. 21	Jan. 23	Chloroform....	Normal.
9	2	".....	".....	Nov. 21	Nov. 30	Chloroform....	Normal.
9	3	".....	".....	Nov. 21	Jan. 23	Chloroform....	Normal.
9	4	".....	".....	Nov. 21	Jan. 26	Chloroform....	Normal.
10	1	Milk.....	Kansas City.....	Nov. 25	Nov. 27		(It would appear that the early death of all four animals was due to some del- eterious substance added to the milk.)
10	2	".....	".....	Nov. 25	Nov. 27		
10	3	".....	".....	Nov. 25	Nov. 27		
10	4	".....	".....	Nov. 25	Nov. 27		
11	1	Milk.....	Kansas City.....	Nov. 25	Jan. 26	Chloroform....	Normal.
11	2	".....	".....	Nov. 25	Jan. 19	?.....	Inguinals enlarged. Smears, sections and cultures negative.
11	3	".....	".....	Nov. 25	Jan. 26	Chloroform....	Inguinals enlarged. Smears, sections and cultures negative.
11	4	".....	".....	Nov. 25	Nov. 27	Chloroform....	Inguinals enlarged. Smears, sections and cultures negative.
12	1	Milk.....	Kansas City.....	Nov. 25	Nov. 27		(It would appear that the early death of all four animals was due to some del- eterious substance added to the milk.)
12	2	".....	".....	Nov. 25	Nov. 27		
12	3	".....	".....	Nov. 25	Nov. 27		
12	4	".....	".....	Nov. 25	Nov. 27		
13	1	Milk.....	Kansas City.....	Nov. 25	Dec. 3		Inguinals enlarged. Smears, sections and cultures negative.
13	2	".....	".....	Nov. 25	Jan. 26	Chloroform....	Inguinals enlarged. Smears, sections and cultures negative.
13	3	".....	".....	Nov. 25	Dec. 9	Chloroform....	Inguinals and spleen enlarged. Smears, sections and cultures negative.
13	4	".....	".....	Nov. 25	Jan. 26	Chloroform....	Inguinals and spleen enlarged. Smears, sections and cultures negative.
14	1	Ice-cream.....	Kansas City.....	Nov. 25	Nov. 27		
14	2	".....	".....	Nov. 25	Nov. 27		
14	3	".....	".....	Nov. 25	Nov. 27		
14	4	".....	".....	Nov. 25	Nov. 27		
15	1	Butter.....	Lawrence.....	Nov. 27	Jan. 16	?.....	Emaciated.
15	2	".....	".....	Nov. 27	Jan. 28	Chloroform....	Normal.
15	3	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
15	4	".....	".....	Nov. 27	Dec. 26	?.....	"
16	1	Butter.....	Lawrence.....	Nov. 27	Jan. 28	Chloroform....	Normal.
16	2	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
16	3	".....	".....	Nov. 27	Dec. 19	?.....	"
16	4	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
17	1	Butter.....	Kansas City.....	Nov. 27	Jan. 14	?.....	Emaciated, otherwise normal.
17	2	".....	".....	Nov. 27	Jan. 28	Chloroform....	Normal.
17	3	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
17	4	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
18	1	Butter.....	Kansas City.....	Nov. 27	Jan. 28	Chloroform....	Normal.
18	2	".....	".....	Nov. 27	Jan. 28	Chloroform....	"
18	3	".....	".....	Nov. 27	Jan. 14	?.....	"
18	4	".....	".....	Nov. 27	Dec. 19	?.....	"

TRANSMISSION OF TUBERCULOSIS THROUGH KANSAS MILK—CONTINUED.

Sample No.	Pie No.	Milk, butter, or ice-cream.	City.	Date of inoculation, 1908-'09.	Date of death, 1908-'09.	Manner of death.	Result of autopsy.
19	1	Milk	Ottawa	Dec. 2	Dec. 15	Chloroform....	Normal.
19	2	"	"	Dec. 2	Feb. 3	"	"
19	3	"	"	Dec. 2	Feb. 3	"	"
19	4	"	"	Dec. 2	Dec. 9	"	"
20	1	Milk	Ottawa	Dec. 2	Feb. 3	Chloroform....	Celiac glands and kidneys enlarged. Smears, sections and cultures negative.
20	2	"	"	Dec. 2	Feb. 3	"	Normal.
20	3	"	"	Dec. 2	Feb. 3	"	"
20	4	"	"	Dec. 2	Feb. 3	"	"
21	1	Milk	Ottawa	Dec. 2	Feb. 3	Chloroform....	Left inguinal gland enlarged. Smears, etc., negative.
21	2	"	"	Dec. 2	Feb. 3	"	Normal.
21	3	"	"	Dec. 2	Dec. 19	"	"
21	4	"	"	Dec. 2	Feb. 3	Chloroform....	Inguinals enlarged. Pus at point of inoculation. Smears, sections and cultures all negative.
22	1	Milk	Ottawa	Dec. 2	Feb. 3	Chloroform....	Normal.
22	2	"	"	Dec. 2	Feb. 3	"	"
22	3	"	"	Dec. 2	Feb. 3	"	"
22	4	"	"	Dec. 2	Feb. 3	"	Inguinals enlarged. Smears, sections and cultures negative.
23	1	Butter	Ottawa	Dec. 3	Feb. 4	Chloroform....	Normal.
23	2	"	"	Dec. 3	Feb. 3	"	"
23	3	"	"	Dec. 3	Feb. 4	Chloroform....	Pus at point of inoculation. Smear showed an acid-fast organism. Cultures negative.
23	4	"	"	Dec. 3	Feb. 4	Chloroform....	Normal.
24	1	Butter	Ottawa	Dec. 3	Feb. 4	Chloroform....	Normal.
24	2	"	"	Dec. 3	Feb. 4	"	"
24	3	"	"	Dec. 3	Dec. 16	"	"
25	1	Milk	Emporia	Dec. 14	Dec. 27	Chloroform....	Normal.
25	2	"	"	Dec. 14	Feb. 16	"	Inguinals enlarged. Spleen enlarged. Smears, sections and cultures negative.
25	3	"	"	Dec. 14	Feb. 16	"	Normal.
25	4	"	"	Dec. 14	Feb. 16	"	"
26	1	Milk	Emporia	Dec. 15	Feb. 16	Chloroform....	Normal.
26	2	"	"	Dec. 15	Dec. 20	"	"
26	3	"	"	Dec. 15	Feb. 16	Chloroform....	Normal.
26	4	"	"	Dec. 15	Feb. 9	"	"

27	1	Milk	Emporia	Dec. 15	Feb. 16	Chloroform	Normal.
27	2	"	"	Dec. 15	Feb. 9	?	Abcess in one inguinal. Smears and cultures negative.
27	3	"	"	Dec. 15	Dec. 23	"	
27	4	"	"	Dec. 15	Dec. 23	"	
28	1	Milk	Emporia	Dec. 15	Dec. 20		
28	2	"	"	Dec. 15	Jan. 2		
28	3	"	"	Dec. 15	Feb. 16	Chloroform	Inguinals and spleen enlarged. Smears, cultures and sections negative.
28	4	"	"	Dec. 15	Feb. 16	Chloroform	Inguinals enlarged. Pus at point of inoculation and in one inguinal gland. Smears and cultures negative.
29	1	Butter	Emporia	Dec. 15	Feb. 16	Chloroform	Normal.
29	2	"	"	Dec. 15	Feb. 16	"	"
29	3	"	"	Dec. 15	Feb. 16	"	"
29	4	"	"	Dec. 15	Feb. 16	"	"
30	1	Butter	Emporia	Dec. 16	Feb. 17	Chloroform	Normal.
30	2	"	"	Dec. 16	Dec. 23	"	
30	3	"	"	Dec. 16	Feb. 17	Chloroform	Normal.
30	4	"	"	Dec. 16	Jan. 3	"	
31	1	Butter	Emporia	Dec. 17	Feb. 18	Chloroform	Normal.
31	2	"	"	Dec. 17	Feb. 18	"	Necrotic spots in liver. Sections negative.
31	3	"	"	Dec. 17	Feb. 18	"	Normal.
31	4	"	"	Dec. 17	Feb. 18	"	
32	1	Butter	Emporia	Dec. 17	Feb. 18	Chloroform	Normal.
32	2	"	"	Dec. 17	Feb. 18	"	"
32	3	"	"	Dec. 17	Feb. 18	"	"
32	4	"	"	Dec. 17	Feb. 18	"	"
33	1	Butter	Emporia	Dec. 17	Feb. 18	Chloroform	Normal.
33	2	"	"	Dec. 17	Jan. 2	"	
33	3	"	"	Dec. 17	Jan. 19	?	Normal.
33	4	"	"	Dec. 17	Feb. 18	Chloroform	Normal.
34	1	Butter	Emporia	Dec. 17	Feb. 19	Chloroform	Normal.
34	2	"	"	Dec. 17	Dec. 24	"	
34	3	"	"	Dec. 17	Feb. 19	Chloroform	Normal.
34	4	"	"	Dec. 17	Dec. 21	"	
35	1	Butter	Newton	Jan. 5	Jan. 18	Chloroform	Normal.
35	2	"	"	Jan. 5	Mar. 6	"	"
35	3	"	"	Jan. 5	Mar. 6	"	"
35	4	"	"	Jan. 5	Mar. 6	"	"
36	1	Butter	Newton	Jan. 5	Mar. 6	Chloroform	Normal.
36	2	"	"	Jan. 5	Mar. 6	"	"
36	3	"	"	Jan. 5	Mar. 6	"	"
36	4	"	"	Jan. 5	Jan. 23	"	"

TRANSMISSION OF TUBERCULOSIS THROUGH KANSAS MILK—CONTINUED.

Sample No.	Pig No.	Milk, butter, or ice-cream.	City.	Date of inoculation, 1908-'09.	Date of death, 1908-'09.	Manner of death.	Result of autopsy.
37	1	Butter.....	Newton.....	Jan. 6	Mar. 7	Chloroform...	Normal.
37	2	".....	".....	Jan. 6	Mar. 7	".....	"
37	3	".....	".....	Jan. 6	Mar. 7	".....	"
37	4	".....	".....	Jan. 6	Mar. 7	".....	"
38	1	Butter.....	Newton.....	Jan. 6	Mar. 7	Chloroform...	Normal.
38	2	".....	".....	Jan. 6	Mar. 7	".....	"
38	3	".....	".....	Jan. 6	Mar. 7	".....	"
38	4	".....	".....	Jan. 6	Mar. 7	".....	"
39	1	Butter.....	Newton.....	Jan. 7	Jan. 31	?.....	Normal.
39	2	".....	".....	Jan. 7	Jan. 17	".....	Pus at point of inoculation. Smears and culture negative.
39	3	".....	".....	Jan. 7	Mar. 8	Chloroform...	Normal.
39	4	".....	".....	Jan. 7	Jan. 31	?.....	Normal.
40	1	Butter.....	Newton.....	Jan. 7	Mar. 8	Chloroform...	Normal.
40	2	".....	".....	Jan. 7	Feb. 13	?.....	"
40	3	".....	".....	Jan. 7	Mar. 8	Chloroform...	"
40	4	".....	".....	Jan. 7	Mar. 8	?.....	"
41	1	Milk.....	Iola.....	Jan. 9	Jan. 22	".....	Pus at point of inoculation. Smear yielded an acid-fast organism. Culture negative.
41	2	".....	".....	Jan. 9	Jan. 27	".....	Pus at two points of inoculation. Smears and cultures negative.
41	3	".....	".....	Jan. 9	Mar. 10	Chloroform...	Normal.
41	4	".....	".....	Jan. 9	Jan. 31	?.....	"
42	1	Milk.....	Iola.....	Jan. 9	Mar. 10	Chloroform...	Normal.
42	2	".....	".....	Jan. 9	Feb. 15	?.....	"
42	3	".....	".....	Jan. 9	Jan. 15	".....	"
42	4	".....	".....	Jan. 9	Jan. 21	".....	"
43	1	Milk.....	Iola.....	Jan. 9	Mar. 10	Chloroform...	Spleen and axillary glands enlarged. Necrotic spots on liver. Pus at point of inoculation. Smears, sections and cultures negative.
43	2	".....	".....	Jan. 9	Mar. 10	".....	Negative.
43	3	".....	".....	Jan. 9	Jan. 18	".....	"
43	4	".....	".....	Jan. 9	Mar. 16	Chloroform...	Inguinals and spleen enlarged. Smears, sections and cultures negative.
44	1	Milk.....	Iola.....	Jan. 9	Mar. 10	Chloroform...	Normal.
44	2	".....	".....	Jan. 9	Mar. 10	".....	Pus at point of inoculation. Smears and cultures negative.
44	3	".....	".....	Jan. 9	Mar. 10	".....	Died immediately from effects of tuberculin inoculation; autopsy normal.
44	4	".....	".....	Jan. 9	Mar. 10	?.....	"

45	1	Milk	Iola	Jan. 9	Mar. 10	Chloroform...	Normal.	Celiac glands enlarged. Adhesions between stomach and pancreas and peritonum. Necrotic spots on liver. Smears, sections and cultures negative. Pus at two points of inoculation. Smears and cultures negative.
45	2	"	"	Jan. 9	Mar. 10	"	"	
45	3	"	"	Jan. 9	Mar. 10	"	"	
45	4	"	"	Jan. 9	Mar. 10	"	"	
46	1	Milk	Iola	Jan. 9	Mar. 10	Chloroform...	Normal.	Pus at point of inoculation. Smear negative.
46	2	"	"	Jan. 9	Jan. 28	"	"	
46	3	"	"	Jan. 9	Mar. 10	"	"	
46	4	"	"	Jan. 9	Jan. 18	"	"	
47	1	Milk	Iola	Jan. 9	Jan. 17	Chloroform...	Normal.	
47	2	"	"	Jan. 9	Jan. 18			
47	3	"	"	Jan. 9	Mar. 10			
47	4	"	"	Jan. 9	Jan. 18			
48	1	Milk	Iola	Jan. 9	Mar. 10	Chloroform...	Pus at point of inoculation. Smears showed an acid-fast organism. Cultures negative.	Pus at point of inoculation. Smears and cultures negative. Pus at point of inoculation. Smears and culture negative.
48	2	"	"	Jan. 9	Mar. 10	"	"	
48	3	"	"	Jan. 9	Jan. 21	"	"	
48	4	"	"	Jan. 9	Feb. 13	?	"	
49	1	Butter	Iola	Jan. 11	Mar. 12	Chloroform...	Normal.	
49	2	"	"	Jan. 11	Mar. 12	"	"	
49	3	"	"	Jan. 11	Mar. 12	"	"	
49	4	"	"	Jan. 11	Mar. 12	"	"	
50	1	Butter	Iola	Jan. 11	Mar. 12	Chloroform...	Normal.	
50	2	"	"	Jan. 11	Mar. 12	"	"	
50	3	"	"	Jan. 11	Mar. 12	"	"	
50	4	"	"	Jan. 11	Mar. 12	"	"	
51	1	Butter	Iola	Jan. 12	Mar. 16	Chloroform...	Normal.	
51	2	"	"	Jan. 12	Jan. 25	"	"	
51	3	"	"	Jan. 12	Jan. 25	"	"	
51	4	"	"	Jan. 12	Jan. 30	"	"	
52	1	Butter	Iola	Jan. 12	Mar. 16	Chloroform...	Pus in inguinal gland. Smears, cultures and sections negative.	Normal. Emaciated; otherwise normal.
52	2	"	"	Jan. 12	Mar. 16	"	"	
52	3	"	"	Jan. 12	Mar. 16	"	"	
52	4	"	"	Jan. 12	Feb. 1	"	"	
53	1	Butter	Leavenworth	Jan. 15	Mar. 16	Chloroform...	Normal.	
53	2	"	"	Jan. 15	Jan. 28	"	"	
53	3	"	"	Jan. 15	Jan. 22	"	"	
53	4	"	"	Jan. 15	Mar. 16	"	"	
54	1	Milk	Leavenworth	Jan. 15	Mar. 16	Chloroform...	Normal.	
54	2	"	"	Jan. 15	Mar. 16	"	"	
54	3	"	"	Jan. 15	Mar. 16	"	"	
54	4	"	"	Jan. 15	Mar. 16	"	"	

TRANSMISSION OF TUBERCULOSIS THROUGH KANSAS MILK—CONCLUDED.

Sample No.	Pk No.	Milk, butter, or ice-cream.	City.	Date of inoculation. 1908-'09.	Date of death. 1908-'09.	Manner of death.	Result of autopsy.
55	1	Milk	Leavenworth.....	Jan. 15	Mar. 16	Chloroform....	Normal.
55	2	"	"	Jan. 15	Mar. 16	"	"
55	3	"	"	Jan. 15	Mar. 16	"	"
55	4	"	"	Jan. 15	Feb. 6	?	Pus at point of inoculation. Smear yielded an acid-fast organism. Culture negative.
56	1	Milk	Leavenworth.....	Jan. 16	Mar. 17	Chloroform....	Normal.
56	2	"	"	Jan. 16	Jan. 28	"	"
56	3	"	"	Jan. 16	Feb. 2	"	"
56	4	"	"	Jan. 16	Mar. 17	Chloroform....	Normal.
57	1	Milk	Leavenworth.....	Jan. 16	Jan. 20	"	"
57	2	"	"	Jan. 16	Mar. 17	Chloroform....	Normal.
57	3	"	"	Jan. 16	Mar. 17	"	"
57	4	"	"	Jan. 16	Jan. 25	"	"
58	1	Butter	Leavenworth.....	Jan. 16	Jan. 31	"	"
58	2	"	"	Jan. 16	Jan. 31	"	"
58	3	"	"	Jan. 16	Jan. 19	"	"
58	4	"	"	Jan. 16	Jan. 26	"	"
59	1	Butter	Leavenworth.....	Jan. 16	Mar. 17	Chloroform....	Normal.
59	2	"	"	Jan. 16	Mar. 17	"	"
59	3	"	"	Jan. 16	Mar. 17	"	"
59	4	"	"	Jan. 16	Mar. 17	"	"
60	1	Butter	Leavenworth.....	Jan. 16	Mar. 17	Chloroform....	Normal.
60	2	"	"	Jan. 16	Mar. 17	"	"
60	3	"	"	Jan. 16	Mar. 17	"	"
60	4	"	"	Jan. 16	Mar. 17	"	"
61	1	Butter	Leavenworth.....	Jan. 16	Mar. 17	Chloroform....	Normal.
61	2	"	"	Jan. 16	Jan. 20	"	"
61	3	"	"	Jan. 16	Mar. 17	Chloroform....	Normal.
61	4	"	"	Jan. 16	Mar. 17	"	"
62	1	Milk	Atchison.....	Jan. 20	Mar. 21	Chloroform....	Normal.
62	2	"	"	Jan. 20	Mar. 21	"	"
62	3	"	"	Jan. 20	Mar. 21	"	"
63	1	Milk	Atchison.....	Jan. 20	Mar. 21	Chloroform....	Pus at point of inoculation. Smears and cultures negative. Inguinal and axillary glands enlarged. Animal emaciated. Smears, sections and cultures negative.
63	2	"	"	Jan. 20	Mar. 21	"	Emaciated. Inguinal and axillary glands enlarged. Smears, sections and cultures negative.
63	3	"	"	Jan. 20	Mar. 21	"	Inguinal, axillary glands and spleen enlarged. Liver with necrotic spots. Smears, sections and cultures all negative.

The sections of lymphatic glands, spleen, liver, etc., showed neither the presence of the bacterium of tuberculosis nor the pathological structure characteristic of this disease.

These altogether negative results are of interest when they are compared with the results obtained from similar investigations in other sections of the country; for example, the vicinity of Washington, D. C. It was here that a campaign similar to the one herein described was carried on by Dr. John F. Anderson. He tested 272 samples, but generally used only one guinea-pig for each. Owing to premature death, only 82 per cent. of the animals remained for study. By these, 6.72 per cent. of the milk samples were shown to contain tubercle bacteria in sufficient numbers to produce disease in the animals.

Two reasons may be assigned for the less frequent occurrence of tuberculous milk in Kansas when compared with that of Washington or other Eastern or European localities. In the older and more thickly settled sections the dairy industry is better organized, by which is meant more highly bred stock is kept and better barns are built. A highly bred dairy animal is one that is specialized along the line of milk productivity. Every characteristic is more or less sacrificed to this end, including hardiness and consequent resistance of disease. It is well known that fancy stock is most susceptible to tuberculosis, and that it is among such that this disease is more generally prevalent. The kind of environment also is a potent factor in affecting the susceptibility. While a well-built barn means excellent shelter, it too often means warm air, poor ventilation, crowded stalls, and excellent conditions for the spread of tuberculosis as well as for its development. This holds true during the winter-time especially, when animals are housed from severe weather.

A study of conditions in Kansas will show that a reduction in the extent of tuberculosis should be expected along both the lines indicated above. The breed of dairy stock is not generally of the fanciest type, which means that hardiness and power of resistance of disease is not so greatly reduced. The barns on the average Kansas farm are so constructed as to possess the virtue of good ventilation. Stock, moreover, roam more freely in the open, with an abundance of fresh air at all times of the year. Under such circumstances it is natural that tuberculosis would have much greater difficulty in gaining a foothold.

The negative results of this investigation do not lead to the conclusion that there are no milch cows in Kansas that suffer from tuberculosis; nor does it mean that there are not a goodly number

perhaps that would react to an inoculated dose of tuberculin. It does signify, however, that at present there is probably no great danger here of encountering tuberculous milk, since the cows are not sufficiently affected with the disease to contaminate their milk to an extent demonstrable in so susceptible an animal as a guinea-pig.

Negative results of this kind, though giving us grounds for encouragement, should not lead us to think that such a state of affairs will necessarily always exist. As the state becomes more densely populated, and more intensive methods of farming become adopted, conditions will arise that duplicate those found at present in the East. Kansas people have a present advantage in that prevention is now more easily attainable than cure will be at some future time. Once tuberculosis is totally banished from our midst by persistent application of the tuberculin test, with the removal of all reacting animals, the dairy industry can be developed to its utmost without the attendant annoyance and danger of a simultaneously developed infectious disease.

Bleached Flour.

Secretary Wilson, of the United States Department of Agriculture, is of the opinion that the shipment in interstate commerce of flour that has been artificially bleached is in violation of the food and drugs act of June 30, 1906. F. I. D. 100 gives the Secretary's views, and is as follows:

FOOD INSPECTION DECISION 100.

BLEACHED FLOUR.

Flour bleached with nitrogen peroxid, as affected by the food and drugs act of June 30, 1906, has been made the subject of a careful investigation extending over several months.

A public hearing on this subject was held by the Secretary of Agriculture and the Board of Food and Drug inspection, beginning November 18, 1908, and continuing five days. At this hearing those who favored the bleaching process and those who opposed it were given equal opportunities to be heard.

It is my opinion, based upon all the testimony given at the hearing, upon the reports of those who have investigated the subject, upon the literature, and upon the unanimous opinion of the Board of Food and Drug Inspection, that flour bleached by nitrogen peroxid is an adulterated product under the food and drugs act of June 30, 1906; that the character of the adulteration is such that no statement upon the label will bring bleached flour within the law; and that such flour cannot legally be made or sold in the District of Columbia or in the territories; or be transported or sold in interstate com-

merce; or be transported or sold in foreign commerce except under that portion of section 2 of the law which reads:

“ . . . *Provided*, That no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser, when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; . . . ”

In view of the extent of the bleaching process and of the immense quantity of bleached flour now on hand or in process of manufacture, no prosecutions will be recommended by this Department for manufacture and sale thereof in the District of Columbia or the territories or for transportation or sale in interstate or foreign commerce for a period of six months from the date hereof.

JAMES WILSON, *Secretary of Agriculture*.

WASHINGTON, D. C., December 9, 1908.

Several of the states have barred bleached flour, notably North Dakota, in which state the court has upheld the contention of Commissioner Ladd, who held that the sale of bleached flour was in conflict with the food laws of that state.

The following circular letter issued by the food commissioner of Kentucky indicates the opinion held by the food officials of that state, and is as follows:

LEXINGTON, KY., June 8, 1909.

For the information and guidance of the manufacturers of and dealers in bleached flour; and others concerned:

Flour bleached with oxids of nitrogen has been made the subject of careful investigation by the United States Department of Agriculture, and by the state food departments as well. After a public hearing by the United States Department of Agriculture, in November, 1908, it was the unanimous opinion of the Secretary of Agriculture and the Board of Food and Drug Inspection that flour bleached with nitrogen peroxid is an adulterated product, under the food and drugs act of June 30, 1906.

As oxids of nitrogen are retained in the flour by this process of bleaching, flour so bleached is an adulterated product under paragraph 5 of section 4 of the Kentucky food and drugs law, in that “it contains added poisonous ingredient which may render such article injurious to health.”

This department holds, therefore, that the sale of flour bleached with oxids of nitrogen is in violation of the Kentucky food and drugs law.

M. A. SCOVELL, *Director*,

Kentucky Agricultural Experiment Station.

The Kansas State Board of Health has felt that inasmuch as the question whether or not the use of bleached flour was deleterious to the health of the consumer was still an open one, not yet having been fully and definitely determined, that Kansas should not go to the extent of prohibiting the manufacture or sale of bleached flour in this state. They have, however, always believed that flour that has been artificially bleached should be branded as such, in order that there may be no deception practiced, and that

the consumer might have the information and therefore exercise a choice as to whether he would purchase the bleached or unbleached flour.

Accordingly, at the annual meeting of the State Board of Health held June 1, 1909, the following regulation was unanimously adopted, and was afterward published in the official state paper June 8, 1909:

“Food products which have been colored, bleached or otherwise treated, and are by reason of such treatment liable to be regarded as superior in quality, or liable to deceive in respect to their nature or origin, shall bear a statement of such treatment on each wholesale package, and on each retail package or container as delivered to the consumer.”—Regulation 10, paragraph *f*.

Dealers in flour in this state are cautioned that this regulation is in full force and effect and should govern themselves accordingly.

Millers who have discontinued the use of the bleacher are permitted to have until August 1, 1909, to dispose of stocks on hand. Millers who have not, and do not expect to discontinue the use of the bleacher, are required to brand all flour on hand or manufactured in the future, in compliance with the regulation.

Some Facts About Tuberculosis Which Every One Should Know.

(Abstract from a lecture by M. T. SUDLER, M. D.)

There is probably not one of us who has not a direct interest in this disease. We have all seen some relative, friend or acquaintance go slowly but surely from out of our vision as a victim of this dread malady. No age, no race, no locality is free from it; in fact, there are very few of the higher animals that are not susceptible to this or a very closely allied trouble. Even fish and reptiles are occasionally attacked. Monkeys kept in confinement nearly all die from it, and among the domestic animals chickens, pigs and cattle suffer most.

While this disease attacks every race, the Indians and negroes are unusually susceptible, and the Hebrews unusually resistant. And while it extends to every clime, the high Alps, the Andes, and the plateau of Mexico are relatively free. In the United States ten per cent. of all deaths, or 150,000 people, die every year from tuberculosis. In greater New York it has been estimated that there are 30,000 children suffering from bone or joint tuberculosis. To offset this dreary picture, Doctor Biggs, of New York, has estimated that in that city its ravages have decreased forty per cent. from 1887 to 1902.

This disease is caused by a lowly organized member of the vegetable kingdom, and was discovered by Doctor Koch, of Berlin, in 1881. It is so small that 8000 placed end to end would measure only an inch. Ordinarily we think of tuberculosis as a disease of the lungs only, but there is no part of our anatomy which may not be attacked by this organism. The presence of this bacillus is absolutely necessary for this disease to occur, and it cannot arise without it any more than an oak tree can start without an acorn or wheat without the grain. What is the source of these germs or bacilli? Nuttall has carefully examined the daily expectoration of a man suffering from advanced tuberculosis of the lungs, and he estimates that from one and one-half to four and one-third billions of tubercle bacilli are daily thrown off. He collected 118 samples of dust from hospitals, prisons and almshouses, and inoculated guinea-pigs. Out of the 118, 40 developed tuberculosis. With such figures the wonder is that any of us escape.

In our larger cities, where tuberculosis has been systematically studied, certain houses are found to contribute more than their share of cases of this disease. One family may move out and another move in, but sooner or later, unless it be disinfected, the shelter of that house means tuberculosis for some of its inmates. This has been called "house infection."

Tuberculosis is now universally conceded to be a contagious disease, as first announced by Villemin, a French physician, in 1865. It can be transmitted by direct inoculation. There have been numerous instances of butchers and others engaged in occupations which would bring them in contact with the bacteria and where the disease developed locally. It can be taken by inhaling dust from powdered sputum, or the dust arising in a room of consumptives, or the small particles thrown out by coughing or sneezing. It is especially prevalent in prisons; and in some of the cloisters in Europe eighty per cent. of the inmates die from tuberculosis, and an unusually large percentage of the nurses of the Paris hospitals have it. The bacillus can also be swallowed, and milk from infected cattle undoubtedly transmits it.

Probably all of us have been exposed to the *Bacillus tuberculosis* at some time or another, and the German pathologists have a proverb, "Every one has a little tuberculosis." We are not all equally susceptible, and we are not equally susceptible at different periods of our lives. That general condition represented by good health is of great importance in warding off most diseases, but it is especially valuable where tuberculosis is concerned. Our occupa-

tion and the place where we live exerts an influence. The person who breathes tainted air, and to whom sunshine and out-of-doors is a luxury, is more likely to prove its victim.

Doctor Trudeau, himself a victim of the disease in New York city, found health and fame in the mountains at Saranac, and one of his experiments almost illustrates his own case. He took two sets of rabbits and inoculated them with the tubercle bacillus. One set he placed in a cellar where the air was damp and not readily changed and where sunlight was lacking. The other set he placed in an open-air cage outside. Those in the cellar all succumbed. A large percentage of those which had fresh air, sunlight and good food recovered. Granting that under present conditions we are all more or less exposed to the tubercle bacillus, the fate of these parasites in the body is interesting. Certain of these bacilli never get a chance to multiply or to grow but are killed outright by the opposing forces of the body, or, as Doctor Osler aptly expressed it, these cells have fallen by the wayside. In other instances they multiply and kill a little tissue, but they are walled off by connective tissue and are retarded by the juices of the body and white blood corpuscles. In still other instances the poisons produced by the bacteria are too strong for the resisting power of the weakened body. The cells around them die and their dead bodies furnish food. The ferments of the blood, which should retard their growth, decrease instead of increase, and the white blood corpuscles are apparently oblivious to the fact their territory has been invaded. This person is probably one of the ten per cent., and these bacilli have fallen on good ground.

Almost all cases of tuberculosis are chronic and tend to heal. The factors tending toward a good outlook are an early diagnosis, a good digestion, a rugged family tree, and, without a state sanitarium, a full pocketbook. And in no other disease is this factor so important; for the consumptive must have fresh air, sunshine, good food and freedom from worry, if he is to recover. No drug plays any specific role in healing this disease. We can meet certain symptoms and make the patient more comfortable, and tonics will tone up the body, but that is all that can be accomplished with drugs.

Like most serious things, the prevention is much easier than the cure. Every consumptive or every tubercular person is a menace to those living with him or around him unless he receives proper care. All sputa should be caught in proper receptacles and burned; his linen, dishes, and personal belongings should be kept separate.

If we could do this in all cases, and eradicate tubercular cattle, the disease would disappear almost entirely from the human race. But in our large cities, where people herd together in poor quarters, this disease is rife, and these act as points of distribution to their wealthier and better housed neighbors, so the wealthy could have an interest in the poor of their cities and their motives yet not be altogether altruistic. The various sanitarium that have been established for the purpose of treating this disease have developed enormously in the past few years. Too much cannot be said in commendation of them, for here skilled persons can always be in attendance and the best of care given, the friends and relatives are not exposed to danger, and the chances of contagion to any one are greatly reduced.

The great institution at Saranac in the Adirondacks which has been developed by Doctor Trudeau, where many have been cured or their lives prolonged, is a model of efficiency and what can be done by the persistence and perseverance of one man. Since its establishment numerous institutions of a similar kind have been organized. Many states have erected buildings where proper care can be taken of these poor unfortunates, removed from their friends and relatives who are still healthy. It is to be hoped that before long in every region there will be institutions where even the poorest, who are willing, can go and receive proper care; not only for their own sake, but for the sake of the health of the community in which they live. And finally, in fighting the "great white death" we must rely on the intelligence of the public. No matter how skilled our physicians, or how splendid our institutions, unless a general knowledge permeates all classes of society this disease will continue to head the list of the causes of death. But with intelligent coöperation, and with a knowledge of the methods of prevention, it can be practically wiped out. And the signs of the times indicate that this is coming about; for this reason learned men and men of wealth are giving their learning and their wealth to the organization of societies and exhibitions for the discussion and dissemination of this knowledge; and just so far as this is successfully done and heeded will we succeed in combating this enemy to the health and happiness of mankind.

A Layman's View of the Sociological and Industrial Aspect of Tuberculosis.

By Mr. W. W. BOWMAN, Secretary Kansas Bankers' Association.

Enough is known and enough has been said during the sessions of this exhibit to well establish the fact that this great subject is not only of profound interest to men of science, to men skilled in the knowledge of diseases and their remedies, to men whose lives are devoted to the welfare of the human body; but it is also of tremendous significance to every man and woman concerned for the safety and well-being of the body politic. Primarily a subject for the scientist, it is not forcing the question into a strange or illegitimate field to assign to it a social and industrial aspect. It has already become one of society's problems, and the solution of it must come, if at all, through those institutions and agencies established within the limits of society itself and through which she executes all her decrees. These are: (1) The God-created unit of society—the individual; (2) the Divinity-appointed unit next above him—the home; (3) that greatest of all institutions among men—part human, part divine—the church; (4) its own self-appointed agencies—the school, the press, the forum, the legislative, executive and judicial branches of the government, and these all dominated by that invisible, intangible thing called “public opinion.”

These are the forces which conspire to make society what it is; forces which with slackened rein may permit society to degenerate physically, intellectually, and morally, but which awakened to lofty aim are well-nigh omnipotent. Equipped with the power to enforce her every mandate, society can, if she will, cure or greatly modify all her ills and almost wholly prevent their recurrence by the removal of their causes.

Now there are physical ills of such nature that, however prevalent, are purely personal and not such as to become in any sense of community concern. For example, if every man and woman in the block in which you live should at the same time be distressed with torture from corns no report would be made to any officer; school would not dismiss until the epidemic had subsided. Each one for himself would apply a “one-night cure” or consult a chiropodist. An unusual number of people in the neighborhood are afflicted with toothache. No appeal is made to the city council nor do the

board of health hold extra sessions. The sufferer, enduring it alone, without sympathizers, till no longer endurable, seeks a painless D. D. S., rewards him with a dollar, and it is all over. But one touch of measles or scarlet fever raises the town, as well it may, and at once a matter is on hand of community concern. Ordinances made and provided must now be observed and officers must do their duty. Not *one* only, but *every one's* welfare is now or may be imperiled.

Do the revelations which have come to us through the progress of this congress speak of any duty which organized society owes to itself? "One-seventh of all deaths," says one, "are due to tuberculosis"; a ratio which may or may not hold good in Topeka. But it is not so much the fact of the great number of deaths resulting from this cause which justifies community intervention, for war and famine and earthquakes and lightning have great numbers of slain charged to their account. Is it not rather the characteristicly infectious nature of the disease; its certain, though less dangerous, hereditary tendency; and the fact that there is much in the environment of city life to invite susceptibility to the disease, that constitute this, at once, one of the problems of home and municipal administration?

A German physician is credited with saying that "Sooner or later everybody has a little tuberculosis." I would prefer to attach credence to the much more specific actual facts presented in the papers and addresses here delivered than to wholesale guesses even of acknowledged specialists; but the aggregate would be sad enough in any case. Yet we ought to know conditions that we might discover their causes and apply the remedies.

We are not willing to admit, the German scientist to the contrary notwithstanding, that "everybody in Topeka has a little tuberculosis," yet we doubtless have the share that every other healthful city has of that class of sufferers. If distinguished at all in this particular it is likely Topeka would be numbered with the most-favored cities; as among those having the least. But again I am guessing. Let us not err by reposing in any false security, nor, on the other hand, be thrown into paroxysms over the fear of impending calamities, but in a sane and intelligent manner view the situation with calmness, and yet with sufficient concern. It is for every individual, every parent, every citizen, every officer, every member of a public board to be thoroughly informed as to the prevailing sanitary conditions, whether they contribute to health or invite disease. Business men zealously watch influences which sap the

financial strength of the community. It is for every man who loves his fellow men to ward off the influences which sap the physical and mental vitality of the community, for with that goes energy and ambition, which, excepting morals, is the community's best asset.

It is comforting to be assured that the widespread belief that tuberculosis is necessarily fatal has been proven incorrect. For the cure we look to our physician, and to him we look also for counsel as to prevention; but a physician cannot follow a strong, healthy man around all day and every day to keep him from danger. He must know some things for himself—must know danger when he meets it; must know how to order and adjust his surroundings. He cannot have a physician as a constant attendant. Parents in the home, boards of education and teachers in the public schools, officers in public places, and especially heads of departments in manufacturing plants and all industrial enterprises, have a tremendous responsibility in shaping the environment and in the general care and oversight of those under their charge.

It is a great question this—how to live well and happily, and long. All sorts of panaceas are offered. Consult the advertising columns of the best magazines and you will be admonished that all will be well with you in this life if you will only drink Postum. You are next attracted by three large letters, "S. S. S." with the explanation that this stands for "Somebody's Swift Specific" and the assurance that there is really nothing that can ail the human body that "S. S. S." will not instantly fix. Then your eye falls on four other large letters, "P. P. P. P.," which, being interpreted, means "Pink Pills for Pale People." Everything else has failed; the four P's never. Some United States senator's picture and autograph is there to prove it. I have one better prescription. It is from the most celebrated physician the world has ever known. It is in two large letters: "B. G." Translated, it means "Be Good." Take every hour in the day, and every day you live; keep it in the home; give it to your friends; and "so shall thy days be long in the land which the Lord thy God giveth thee."

There are in the United States 297 sanatoria, 222 dispensaries and 290 associations for the treatment or prevention of tuberculosis, while there are 600,000 cases of this disease in the country. It is estimated by the United States Conservation Commission that this country loses annually \$1,000,000,000 from preventable tuberculosis.

Barber Shops and Public Bath-rooms.

At the annual meeting of the Kansas State Board of Health, held June 1, 1909, the following regulations in relation to barber shops, barber schools, public bath-rooms and public bath-houses were unanimously approved and adopted:

Be it ruled by the State Board of Health:

REGULATION 1. *Inspection.* All barber shops and barber schools, public bath-rooms and public bath-houses shall be open for inspection at any time during business hours to the inspectors of the State Board of Health, or to any local sanitary or health officer.

REGULATION 2. *General sanitation.* All places mentioned in regulation 1, together with their furniture, fixtures, instruments and utensils, are required to be kept in a clean and sanitary condition.

REGULATION 3. *Instruments.* Mugs, shaving-brushes, razors, scissors, clipping-machines, pincers, needles, the contact cup or pad of vibrating or massage machines, and all other instruments, shall be sterilized either by immersion in boiling water or in alcohol of at least sixty per cent. strength, or by formaldehyde gas or solution, after each separate use. Combs and brushes shall be thoroughly cleansed with soap and water at least once daily.

REGULATION 4. *Towels.* Clean towels shall be used for each person served. Towels shall not be used for more than one person until laundered.

REGULATION 5. *Alum.* Alum or other material used to stop the flow of blood shall be applied only on a clean cloth or towel or other clean appliance. The use of styptic sticks or pencils is prohibited.

REGULATION 6. *Powder-puffs.* The use of powder-puffs and sponges is prohibited.

REGULATION 7. *Hands.* Every barber shall thoroughly cleanse his hands immediately before serving each customer.

REGULATION 8. *Razor-strops.* Any barber when shaving any person having an eruption on the face of any kind or nature shall be required to disinfect the razor by dipping in a 15 per cent. solution of formaldehyde before stropping.

REGULATION 9. *Air and water.* Every barber shop and bath-room shall be well ventilated and provided with running hot and cold water.

REGULATION 10. *Sleeping-room.* No barber shop, barber school or public bath-room shall be used as a sleeping-room.

REGULATION 11. *Skin disease.* After serving persons who have eruptions on the face or scalp, or are afflicted with contagious skin disease, all metal tools and instruments, brushes and combs that have been used on such person shall be thoroughly sterilized by boiling water or the use of formaldehyde gas before being used again, and the hands shall be thoroughly cleansed with disinfecting solution, and all towels and damp cloths used shall be thoroughly boiled before being laundered.

REGULATION 12. *Bath-tubs.* All bath-tubs shall be thoroughly cleansed with hot water and soap after each separate use.

REGULATION 13. *Disinfection.* Every public bath-room or public bath-house shall be thoroughly and efficiently disinfected with formaldehyde gas or sulfur fumes at least once in every three months.

REGULATION 14. *Venereal disease.* No person shall knowingly be served in any barber shop, public bath-room or public bath-house, who is suffering from syphilis, such prohibition to continue until more than six months have elapsed from date of infection. No person shall knowingly be served in any public bath-room or public bath-house who is suffering from gonorrhea.

REGULATION 15. *Contagious disease.* No person suffering from measles, scarlet fever, smallpox, diphtheria or diphtheritic sore throat, barber's itch, ringworm or tuberculosis shall be served in any barber shop, barber school, public bath-room or public bath-house.

REGULATION 16. *Disinfection of tools, etc.* All tools or instruments used by barbers outside the shop in serving any person suffering from infectious or contagious diseases or used on a corpse are required to be thoroughly and efficiently disinfected with formaldehyde solution or formaldehyde gas immediately after using the same.

REGULATION 17. *Barbers must be free from infectious disease.* No person suffering from any infectious or contagious disease, including tuberculosis, shall serve any person in any barber shop, barber school, public bath-room or public bath-house in this state.

REGULATION 18. *Rules posted.* These rules and regulations shall be conspicuously displayed in each barber shop, barber school, public bath-house and public bath-room in Kansas.

Penalty. Any person violating any of these rules and regulations shall, upon conviction, be fined a sum not to exceed fifty dollars or less than five dollars.

The State Board of Health authorized and directed that local health officers should be charged with the inspection of all barber shops and public bath-rooms in their respective jurisdictions, and with the enforcement of the law, filing complaint with the county attorney of all violations of these regulations, sending a copy of such complaint to the secretary of the State Board of Health.

Tuberculosis Notes.

Consumption among Japanese laborers is increasing to such a degree that the figures are becoming a source of anxiety to Japanese merchants and officials. A large percentage of laborers who are sent back to Japan by the Japanese charity associations are consumptives. It is claimed by the Japanese newspapers commenting on this matter that through the lack of hospital accommodations in the Japanese labor camps tuberculosis increases at an alarming rate. They suggest that a new system be employed in

dealing with the sick in these camps, as the Japanese are quite ignorant of even the most simple health safeguards.

The most prominent tuberculosis specialists in the country agree that alcohol will not cure consumption. Dr. S. A. Knopf says: "Alcohol has never cured and never will cure tuberculosis. It will either prevent or retard recovery." Dr. Frank Billings, of Chicago, and Dr. Vincent Y. Bowditch, ex-presidents of the National Association for the Study and Prevention of Tuberculosis; Dr. Lawrence F. Flick, of Philadelphia, and Dr. Edward L. Trudeau, of Saranac Lake, the founder of the anti-tuberculosis movement in this country, are all of the same opinion.

Dr. William Osler says: "Whether tuberculosis will be finally eradicated is even an open question. It is a foe that is very deeply intrenched in the human race. Very hard will it be to eradicate completely; but when we think of what has been done in one generation, how the mortality in many places has been reduced more than 50 per cent.—indeed in some places 100 per cent.—it is a battle of hope, and so long as we are fighting with hope the victory is in sight."

Germany has 82 sanatoria for tuberculosis, which hold over 20,000 poor consumptives; the cost of each sanatorium is about \$100,000. Through organized effective methods Germany has reduced the death-rate from consumption by one-half throughout the nation. In the German army tuberculosis has diminished 42 per cent. during the past twenty years (from 3.3 to 1.9 per cent. per thousand of the effective force).

The municipal authorities of Berlin have decided to introduce another feature in the municipal administration of tuberculosis. Heretofore municipal effort has been confined to the maintenance of one or two homes for curable consumptives, but it is recognized that, as useful as this is, it alone cannot cope with this disease. They have resolved, therefore, to devote more attention to preventive measures.

Homer Folks, of New York city, recently stated before the National Association for the Study and Prevention of Tuberculosis that there are in the United States at the present time 75,000 cases of tuberculosis in advanced stages of the disease, every one of whom should be isolated in hospitals, but there are at the present time only 5000 hospital beds for these cases in the entire country.

PATIENCE.

Supposin' fish don't bite at first,
What are you goin' to do?
Throw down your pole, chuck out your bait,
An' say your fishin's through?
You bet you ain't; you're goin' to fish,
An' fish, an' fish, an' wait
Until you've ketched a basketful
Or used up all your bait.

Suppose success don't come at first,
What are you goin' to do?
Throw up the sponge and kick yourself?
An' growl, an' fret, an' stew?
You bet you ain't; you're goin' to fish,
An' bait, an' bait ag'in,
Until success will bite your hook,
For grit is sure to win.

—Col. Wm. C. Hunter.

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JULY, 1909.

VOL. V.

It is said that we have God's own country, man's own back yard and the devil's own cesspool, but our sewage system is that of the prince of devils—the quintessence of cruel disregard for the rights of others. Is it not time we started a crusade for natural water instead of filtered sewage?—*American Medicine.*

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Reported to the Kansas Board of Health for June, 1909.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State...total, June, 1908.....	91 110	55 64	48 70	6 19	33 34	2 6	72 51	6 2	182 188	1 1	331 35	1 2
Allen	0	0	2	1	0	0	0	0	0	0	20	0
Anderson	2	2	0	0	0	0	0	0	0	0	1	0
Atchison	0	0	0	0	0	0	0	0	7	0	0	0
*Barber	0	1	0	0	0	0	0	0	0	0	0	0
Barton	0	1	0	0	0	0	0	0	0	0	0	0
*Bourbon	2	2	0	0	2	1	0	0	1	0	0	0
Brown	0	0	0	0	0	0	0	0	0	0	0	0
Butler	2	0	0	0	0	0	0	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua.....	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee.....	3	3	0	0	1	0	0	0	0	0	0	0
Cheyenne.....	0	0	0	0	0	0	0	0	0	0	0	0
*Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	1	1	0	0	0	0	0	0	0	0	0	0
*Coffey	0	0	0	0	0	0	0	0	3	0	15	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley.....	0	0	0	0	0	0	0	0	0	0	0	0
Crawford.....	5	5	0	0	1	0	0	0	0	0	5	0
Decatur.....	0	0	0	0	2	0	0	0	12	1	1	0
Dickinson.....	0	0	0	0	0	0	0	0	5	0	0	0
*Doniphan.....	4	2	1	0	1	0	3	0	0	0	35	0
Douglas.....	0	0	1	0	0	0	2	0	0	0	20	0
Edwards.....	0	0	0	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	0	0	0	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	0	0	0	0	0	0	1	0	0	0
Finney.....	0	0	0	0	0	0	1	0	0	0	9	0
*Ford	2	2	3	1	0	0	0	0	0	0	0	0
Franklin.....	0	0	0	0	2	0	0	0	0	0	0	0
Geary.....	0	0	0	0	0	0	0	0	0	0	0	0
Gove.....	4	0	0	0	0	0	0	0	6	0	0	0
Graham.....	0	0	0	0	0	0	0	0	0	0	0	0
Grant.....	0	0	0	0	0	0	0	0	0	0	0	0
Gray												
*Greeley												
*Greenwood.....												
*Hamilton												
*Harper.....												
*Harvey	0	0	1	0	0	0	1	0	0	0	2	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	0	0
Jackson.....	0	0	0	0	0	0	0	0	10	0	0	0
Jefferson.....	0	0	0	0	1	0	2	0	0	0	0	0
Jewell	0	0	0	0	0	0	0	0	0	0	15	0
Johnson.....	0	0	1	0	1</							

CONTAGIOUS AND INFECTIOUS DISEASES—Continued.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.								Deaths.
Maude.....	0	0	1	1	0	0	1	0	0	0	0	0
*Miami.....	0	0	0	0	0	0	0	0	0	0	27	0
Mitchell.....	0	1	1	0	1	0	2	0	1	0	1	0
Montgomery.....	0	0	0	0	0	0	0	0	0	0	0	0
*Morris.....	0	0	0	0	0	0	0	0	0	0	0	0
*Morton.....	0	0	1	0	0	0	0	0	1	0	1	0
Nemaha.....	2	2	1	0	0	0	0	0	0	0	0	0
Neosho.....	1	1	0	0	0	0	0	0	0	0	0	0
Ness.....	0	0	0	0	0	0	0	0	0	0	0	0
Norton.....	0	0	0	0	0	0	1	0	0	0	0	0
Osage.....	3	3	1	0	1	1	0	0	16	0	0	0
Osborne.....	0	0	0	0	0	0	2	0	2	0	0	0
*Ottawa.....	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee.....	0	0	0	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	0	0	0	0	0	0	0	0	1	0	0	0
Pratt.....	1	1	0	0	0	0	1	0	0	0	0	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	1	0
Reno.....	1	0	2	0	0	0	4	0	0	0	2	0
Republic.....	0	0	0	0	0	0	0	0	1	0	0	0
Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	0	0	0	0	0	0	0	0	1	0	0	0
Rooks.....	0	0	1	0	0	0	0	0	0	0	0	0
Rush.....	0	0	0	0	0	0	0	0	2	0	0	0
*Russell.....	0	0	0	0	0	0	0	0	0	0	0	0
Salina.....	2	2	0	0	0	0	0	0	0	0	0	0
Scott.....	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick.....	1	1	4	0	2	0	4	0	0	0	2	0
Seward.....	1	0	0	0	0	0	0	0	0	0	0	0
Shawnee.....	0	0	1	0	0	0	1	0	2	0	0	0
Sheridan.....	0	0	0	0	0	0	0	0	0	0	1	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	0	0
Smith.....	0	0	0	0	0	0	0	0	0	0	0	0
Stafford.....	2	2	0	0	0	0	14	6	0	0	1	0
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens.....	0	0	1	2	0	0	0	0	0	0	13	0
Sumner.....	0	0	2	0	0	0	0	0	0	0	0	0
Thomas.....	0	0	0	0	0	0	0	0	0	0	0	0
*Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee.....	0	0	0	0	0	0	0	0	0	0	0	0
Wallace.....	0	0	1	0	0	0	0	0	0	0	0	0
Washington.....	1	1	0	0	0	0	2	0	0	0	0	0
Wichita.....	0	0	0	0	2	0	0	0	0	0	0	0
*Wilson.....	0	0	0	0	0	0	0	0	0	0	0	0
Woodson.....	0	0	0	0	0	0	0	0	0	0	0	0
Wyandotte.....	1	0	0	0	0	0	1	0	0	0	1	0
Cities:												
Atchison.....	0	0	0	0	0	0	2	0	0	0	0	0
Coffeyville.....	2	2	1	0	0	0	0	0	0	0	0	0
Fort Scott.....	3	1	0	0	0	0	0	0	0	0	0	0
Kansas City.....	1	10	1	0	3	0	13	0	16	0	69	0
Leavenworth.....	4	4	1	1	0	0	1	0	0	0	1	0
Parsons.....	0	0	1	0	0	0	0	0	1	0	3	0
Pittsburg.....	1	1	0	0	1	0	0	0	0	0	23	0
Topeka.....	0	0	1	0	3	0	4	0	16	0	19	0
Wichita.....	0	0	6	0	4	0	3	0	3	0	13	0
State Institutions.	29	1	0	0	0	0	0	0	0	0	0	0

* No report.

Scene in Police Court.

JUDGE: "Why did you strike this man?"

PRISONER: "What would you do, Judge, if you kept a grocery store and a man came in and asked you if he might take a moving picture of your cheese?"

DRUG ANALYSES No. XXI.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STIRLING, Microscopist.

LAWRENCE, KAN., July 17, 1909.

The twenty-first report of drug analyses is herewith submitted. It contains in the first place the analysis of sixty samples of tincture of iodine. It will be noted that twenty per cent. of these do not contain the required potassium iodide. Conferring with drug analysts from other states, recently, I find this to be a common experience. Many pharmacists in other states are still dispensing the tincture of iodine of the Pharmacopœia of 1890, which did not prescribe the presence of this salt, but was made of iodine and alcohol. Forty per cent. of the preparations sent to the laboratory deviate more than ten per cent. from the required (official) iodine strength.

Our laboratory has carried on a series of experiments to show the effect of cork stoppers on the tincture, as our inspectors have sent their samples mostly in this way. A future report will give the result of these experiments in detail. It may be sufficient at present to say that the tendency of cork-stoppered containers is to concentrate (strengthen) the iodine solution rather than weaken it. The bearing this has upon the analytical results reported will easily be seen.

A variety of proprietary compounds have been received from inspectors and are herewith reported upon. In some of these there is an evident discrepancy in the declared percentage of alcohol and the percentage of that liquid found—for example, Nos. 2928, 2943, 3044, 3067, and 2935. The report also includes an examination, called for, of certain tonic elixirs in which there seems to be but a trace of medicinal agent; whether this is evident deficiency in such agent it is not the analyst's province to decide. It may be said that many elixirs or cordials have but little drug extractive present, and many are made of essential oils which leave little residue. The liquids referred to are Nos. 2954, 3044, 3045, and 3104. The compound represented by No. 3008, declared to be perfectly harmless, is reported upon, leaving your board to decide the question of the propriety of using such a term. The constituents are properly declared on label.

TINCTURE OF IODINE.

Tincture of iodine should show by assay about 6.96 grams of iodine in each 100 cc. of tincture, and should contain about 5 grams of potassium iodide in each 100 cc. of tincture.

Lab. No.				Grams of iodine in each 100 cc. of tincture.	Potassium iodide.
3109	8000	P. A. O'Reilly	Walnut	7.50	Broken in transit.
3110	8001	C. H. Daggett		5.50	Present.
3111	8002	L. W. Ash	Pittsburg	7.20	None.
3112	8003	Cash Drug Co.		6.87	Present.
3113	8004	E. R. Wheeler	Galena	14.40	"
3114	8005	Crowell's Drug Store	Pittsburg	7.70	"
3115	8006	R. Lindburg	"	6.87	"
3116	8007	D. Hogeboom	"	7.60	"
3117	8008	W. E. Pierce		4.75	None.
3118	8009	R. C. Shellac	Galena	6.20	Present.
3119	8010	J. E. Dillard	Cherokee	6.87	"
3120	8011	A. R. Kane	Baxter Springs	1.82	"
3121	8012	L. J. Haines	Galena	6.12	"
3122	8013	T. M. Bailey	"	6.87	"
3123	8014	C. C. Moore		5.00	"
3124	8015	Roy Bertholf	Cherokee		Broken in transit.
3125	8016	Lewman Bros	Pittsburg	6.22	Present.
3126	8017	Pittsburg Drug Co.		7.10	"
3127	8018	John Huff	Empire City	4.80	"
3128	8019	H. Kettler	Pittsburg	4.67	None.
3129	8020	Thos. Elliot		4.96	"
3130	8021	Morrow & Co.	Baxter Springs	7.20	Present.
3131	8022	T. V. Campbell	Galena	7.90	"
3132	8023	J. P. Brumfield			Broken in transit.
3133	8024	Merrill Bros.	Girard	6.22	Present.
3134	8025	C. H. Phillips	"	4.27	None.
3135	8026	J. E. McNaught	"	6.88	Present.
3136	8027	J. M. Higgin	"	3.50	"
3137	8028	Girard Drug Co.		7.45	"
3138	8029	A. L. Campbell	Mound Valley	8.42	"
3139	8030	Jas. Lear		7.05	"
3140	8031	H. S. Mustard	Cherryvale	6.50	"
3141	8032	C. H. Ward	"	6.80	Missing.
3142	8033	Owl Drug Co.	"	5.76	"
3143	8034	Arbuthnott & Kallene	"	6.80	Present.
3144	8035	A. H. Kinney	"	6.00	"
3145	8036	S. W. Squier	"	7.27	"
3146	8037	F. C. Oehler		7.80	"
3147	8038	H. E. Read	Altamont	6.65	"
3148	8039	Charles Woolven	Oswego	7.90	"
3149	8040	Kingsbury & Frick	"	4.17	"
3150	8041	Newton Drug Co.		7.02	"
3151	8042	Slosson Drug Co.	Coffeyville	7.70	"
3152	8043	Junction Pharmacy	"	6.90	"
3153	8044	Lang & Sons	"	1.60	"
3154	8045	Mecca Drug Co.	"	7.07	"
3155	8046	Palace Drug Co.	"	6.17	"
3157	8048	W. W. Drug Co.	"	6.70	"
3158	8049	Tennessee Drug Co.	"		Broken in transit.
3159	8050	Owl Pharmacy	"	7.15	Present.
3160	8051	Nichols Drug Co.	"	6.75	"
3161	8052	A. R. Kane	"	5.02	"
3162	8053	Fred Haines Drug Co.	"	1.55	"
3163	8054	Gordon Flores		7.37	"
3164	8055	Opera House Drug Co.	Caney	5.47	None.
3165	8056	Caney Pharmacy	"	4.00	"
3166	8057	J. A. Winkler	"	4.00	"
3167	8058	A. M. Taylor	"	4.55	"
3168	8059	J. W. Miner		7.10	Present.
3169	8060	Deraham Drug Co.	Chetopa	6.32	"
3170	8061	F. J. Cunningham	"	4.50	None.
3171	8062	Bush Pharmacy		7.45	Present.
3172	8063	H. Evans Loube	Edna		

Lab. No. 2928, Insp. No. 1908. Essence of Jamaica Ginger. J. N. Harter, Winfield. Alcohol declared, 93 per cent.; alcohol found, 45.1 per cent. Samples contained considerable sediment.

Lab. No. 2935, Insp. No. 1915. Tona Scene Shampoo Hair Tonic. O. Bishop & Co., Arkansas City, Kan. Guaranteed to cure dandruff and falling hair. Alcohol declared, 20 per cent. Contains borax or boric acid and quinine, and about 4 per cent. of alcohol.

Lab. No. 2936, Insp. No. 1916. *Pilulæ Quininæ Bisulphatis*. Manufactured by Eli Lilly & Co. John S. Cree, Arkansas City, retailer. Declared to contain 2 grains quinine bisulfate. Passed.

Lab. No. 2943, Insp. No. 1923. Essence of Jamaica Ginger. S. & S. Drug Company, Arkansas City. Alcohol declared, 93 per cent.; alcohol found, 26.5 per cent.

Lab. No. 2948, Insp. No. 1928. Whiskey, A Blend. A. F. Gatlin, Topeka. Alcohol declared, 41 per cent.; alcohol found, 41 per cent. Colored with caramel.

Lab. No. 2949, Insp. No. 1929. Port Wine. A. F. Gatlin, Topeka. Alcohol declared, 15 per cent.; alcohol found, 19.9 per cent. Acidity equivalent to 0.4 per cent. absolute acetic acid. Residue, 9.6 per cent.; ash, 0.37 per cent.

Lab. No. 2954, Insp. No. 1934. Juniper Cordial. E. E. Brune & Co., Omaha, Neb. Claimed to be a world-renowned remedy for all diseases of the kidneys. Alcohol declared, 35 per cent. Found to contain alcohol (33.6 per cent.), cane sugar and juniper flavor. Dose, one-half wine-glass three times a day.

Lab. No. 2989, Insp. No. 1969. Toilet Water (Vegetal). Found to contain alcohol 45 per cent., perfumed, colored green.

Lab. No. 2998, Insp. No. 1978. Wood's Mexican Hair Restorative. Kansas City Medicine Company, Kansas City, Mo. Alcohol declared, 6 per cent. Claimed to restore gray hair or beard to its original color. Beneficial for eczema and ulceration where it can be applied. Prevents hair from falling out. Promotes a fine growth on bald spots. Found to contain salt, glycerin, sulfur and a salt of lead.

Lab. No. 3008, Insp. No. 1988. Perfection Headache Wafers. Manufactured by Peninsular Chemical Company, Detroit, Mich. Declared to contain acetanilid, 5 grains in each wafer, and not to contain morphine or antipyrine. Declared perfectly harmless. Acetanilid, sodium bicarbonate and milk sugar are present.

Lab. No. 3018, Insp. No. 1998. Germazone. Manufactured by Geo. H. Lee & Co., Omaha, Neb. "A poultry remedy—the best cure for cholera, frosted combs, roup, inflammation of the throat, canker, and all diseases of poultry." Found to contain permanganate of potash (56 per cent.) and some boric acid or borax.

Lab. No. 3023, Insp. No. 2003. Thompson's Orange Nectar

Compound. Chas. P. Thompson, manufacturer, La Crosse, Wis. Composed largely of citric acid, caramel, and flavored with orange.

Lab. No. 3024, Insp. No. 2004. Powdered Rhubarb. D. B. Harsh, Seneca. Passed.

Lab. No. 3026, Insp. No. 2006. Powdered Rhubarb. John L. Clark, Seneca. Passed.

Lab. No. 3039, Insp. No. 2019. Brandy Compound (San Diego). E. F. Clark, Summerfield. Contains 48.6 per cent. of alcohol.

Lab. No. 3044, Insp. No. 2024. Peruvian Strengthening Elixir Compound. Manufactured by the McPike Drug Company, Kansas City, Mo. Geo. Sourk, Goff, retailer. Alcohol declared, 42 per cent. Claimed to be a remedy for dyspepsia, costiveness, heaviness of stomach; to assist digestion; to give a good appetite and impart a healthy tone to the whole system, and is a good preventative of fever and ague. Contains 50.2 per cent. alcohol by volume. Flavored with orange. Residue from 100 cc. equals 1.64 gm. Residue has slight bitter taste. Dose, one wineglassful three times a day.

Lab. No. 3045, Insp. No. 2025. Gentian Bitters Compound. Evans-Smith Drug Company, Kansas City, Mo. G. W. Sourk, Goff, Kan., retailer. Declared a remedy for indigestion, loss of appetite, malarial diseases; to contain 40 per cent. alcohol. Gentian Bitters was found to contain 39.4 per cent. alcohol. Residue from 100 cc. equals 0.3 gm., which is less than that of whiskey. Gentian Bitters is little other than a beverage.

Lab. No. 3062, Insp. No. 2042. Tincture of Capsicum. M. F. Moore, Westmoreland. Contains alcohol 88 per cent. Pale yellow in color; not very pungent.

Lab. No. 3063, Insp. No. 2043. Whiskey. M. F. Moore, Westmoreland. Contains 47 per cent. alcohol. Colored with caramel.

Lab. No. 3067, Insp. No. 2047. Beauchamp's Rum and Quinine Hair Tonic. Prepared by Beauchamp Manufacturing Company. Declared to contain 21 per cent. alcohol. Contains borax or boric acid, glycerin, a trace of quininē, saponin a pungent principle, and 14 per cent. of alcohol.

Lab. No. 3072, Insp. No. 3052, Calomel and Sodium Bicarbonate Tablets. Mercuric salt is present. Unfit for sale.

Lab. No. 3090, Insp. No. 2070. Salt of Tartar. North Side Pharmacy, Holton. Passed.

Lab. No. 3091, Insp. No. 2071. Cream of Tartar. Scott & Taber, Holton. Passed.

Lab. No. 3104, Insp. No. 2084. Allan's Restorative Tonic.

Faxon and Gallagher Drug Company, Kansas City, Mo. McDaniel Drug Company, Valley Falls, retailer. Declared to contain alcohol, 33 per cent, Peruvian bark, gentian, juniper, orange peel, caraway and cardamon. Dose for adults is from one to two tablespoonfuls three times a day. Found to contain 38 per cent. alcohol. Residue from 100 cc. is slightly bitter and weighs 0.9 gm.

The Interpretation of a Water Analysis.

From Monthly Bulletin of New York State Department of Health.

The object of a sanitary chemical analysis is not to determine the amount of certain compounds of carbon, hydrogen and nitrogen in the water because these compounds are in themselves dangerous, but to determine the absence or presence of and, if present, the amount of such compounds as will aid us in tracing the past history or the present condition of the particular water that is being studied.

For this purpose we determine the amount of organic matter, living or dead, that is suspended or dissolved in the water, the amount of certain of the products of decomposition of organic matter, and the amount of certain minerals dissolved in the water.

Each class of waters has its own characteristics. The significance of any given factor must be judged separately for each particular case.

An approximate estimate of the amount of organic matter can be obtained by the determination of the amount of albuminoid ammonia and by the oxygen-consumed value.

Albuminoid ammonia.—When boiled with an alkaline solution of permanganate of potash, many complex organic substances containing nitrogen are broken up and the nitrogen converted into ammonia. By measuring the amount of ammonia so produced, we can get an idea of the amount of undecomposed nitrogenous organic matter in the water that might later decompose. The ammonia so produced is called "albuminoid ammonia," because albumen is a typical substance which, when broken up by this process, will produce ammonia.

Oxygen consumed.—On the other hand, if another portion of the water, made slightly acid with sulfuric acid, is digested with a solution of permanganate of potash, the carbon in the organic matter will be oxidized. In this manner we can estimate the amount of carbonaceous organic matter, as we are able to measure the amount of oxygen which is consumed in breaking it up.

To repeat, then, the albuminoid-ammonia value is a measure of the undecomposed nitrogenous organic matter, and the oxygen-consumed value is a measure of the undecomposed carbonaceous organic matter.

Free ammonia.—We determine the amount of free ammonia in the water because, with very rare exceptions—and these exceptions are well known—the amount of this substance present is an index of the amount of active decomposition taking place in a given water.

As ammonia is the result of the first step in the process of decomposition, it is accompanied by the bacteria that produce the decomposition and its presence is indicative of recent pollution.

Nitrites.—The oxidation of the ammonia to nitrites is the second step in the decomposition process. Usually high free-ammonia values and high nitrite values go hand in hand, as both processes are usually going on simultaneously.

Nitrites, then, are also a measure of active decomposition and of incomplete purification.

Water in which the free-ammonia and nitrite values are high are viewed with suspicion, because, in the stages of decomposition in which these substances are produced the bacterial life is prevalent; and if any of the polluting material is of human origin, the danger from pathogenic organisms is also present.

Nitrates.—The final step in the mineralization or nitrification process is the conversion of nitrites into nitric acid, which combines with a base to form nitrates. In the form of nitrates, the nitrogen is completely mineralized and nature's cycle of conversion has been completed.

A water may contain a large amount of nitrates and also a considerable amount of free ammonia and nitrites. Such a water has been incompletely purified and usually contains a considerable number of bacteria; and if some of these are of human origin, the water is, of course, unsafe.

On the other hand, there may be a large amount of nitrates and the free ammonia and nitrites be practically absent. Such a water would be one that had at one time been badly polluted with organic matter, but this material had been mineralized by the purification processes. Waters in this condition generally show low bacterial counts and the absence of fecal organism (bacilli of the *B. coli* type), as the purification processes also remove the bacteria; but it requires a high degree of purification to completely remove the fecal bacteria, and consequently the danger of infection.

Chlorin.—The organic matter found in water is not stable, but is in a state of transition until it is completely mineralized; but the compounds of chlorin are very stable, and when they once gain access to water they remain to bear witness against it and to serve as a telltale of past bad associations. It is because of this that so much significance is given to the chlorin content of a water.

The legitimate sources of chlorin in natural waters are from the sea and from the natural deposits of salt that are the remains of prehistoric seas. Storms break up the waves into spray, which is carried inland by the wind currents and with it small particles of salt. This spray is washed down by the rain, so that all surface-water contains some salt. The quantity is quite proportional to the distance from the seacoast, so that several hundred miles inland it is only present in small quantities, while near the seacoast the quantity is considerable, so that where it is not a natural constituent of the earth, as in the salt regions of this state, the normal amount of chlorin for a surface-water from any given locality can be quite accurately determined, and any excess above this amount is an indication of pollution by animal or human wastes.

Salt, being used in the domestic animal diet and to a much larger extent in the human kitchen, is therefore found in the animal and human wastes; and when such wastes reach a water, the presence of the excess chlorin will indicate animal or human pollution which has reached the water at some time in its history. The pollution may have been completely mineralized, yet the chlorin remains to show what has been.

Bacteriological analysis of water.—In the routine bacteriological analysis of a water we do not attempt to isolate the specific typhoid organism, but only those organisms which have a fecal origin, and some of the reasons for this follow.

Water is not a natural habitat for typhoid bacilli, and the majority of them probably die off in a short time. As there is a period of incubation between the infection and the recognition of the disease, it is possible in water-borne cases for the typhoid bacilli to have disappeared from the water before the disease has been recognized.

If the source of the water was a flowing stream and the infection was occasional and not constant, the search for the organism would, of course, be useless. Under such conditions, even if our laboratory technique were perfect, we would not be able to prove our case.

The typhoid organism has been occasionally isolated from water-

supplies; but the laboratory technique is not simple, and the practical difficulties are such that we know of no laboratory which attempts it as a routine procedure.

B. coli communis.—In water laboratories the isolation of the bacilli of the *B. coli communis* type is the routine procedure. These organisms are normal inhabitants of the intestinal tracts of man and warm-blooded animals. The inference is that as they have an intestinal origin their presence indicates fecal matter, and some of these feces, if of human origin, may at times contain typhoid organisms.

If the laboratory examinations show organisms of the *B. coli communis* type to be absent, we can definitely say that the water is safe; but if the examinations show that they were not entirely absent, we could not as definitely say that the water was dangerous. As we are not able to differentiate between the organisms of human and animal origin, the mere presence of a few bacteria of the *B. coli communis* type does not necessarily indicate pollution from human beings, as they might be entirely of animal origin, coming from pasture lands or fertilized fields; but if the organisms are persistently present in small volumes of the water, say in one centimeter or less, the water should be considered unsatisfactory, for even though most of the organisms may be of animal origin they are generally accompanied by those from human wastes.

The preceding discussion of sanitary water analysis makes it quite evident that, except in those cases where fecal pollution is entirely absent, a sanitary analysis can seldom definitely establish the fact that a given sample of water is from a supply which is either entirely safe or absolutely dangerous. It can point out probable danger, and as such is an aid to be used in connection with other sources of information.

It is a valuable adjunct to a sanitary survey; that is, an actual knowledge of the physical conditions surrounding the source of the sample, the possible sources of pollution, the geology of the watershed, the slope of the ground, etc. To make an interpretation such knowledge is absolutely necessary, and for this reason samples sent to the laboratory should always be accompanied by all possible information as to the history and source of the water.

“The value of a water analysis is in direct proportion to the knowledge and experience of the one who interprets it. Clinical skill, in addition to theoretical knowledge, is required to interpret the figures obtained in the course of a water analysis, as in the symptoms of a disease; and the analogy goes still further, for as

some diseases are clearly defined, others are so complicated that only those who have had long experience can outline a safe course of treatment; so some waters bear the marks of their character so plainly as not to admit of mistake, while others require most careful study."*

We would add to the above statement that clinical skill, knowledge and experience are frequently baffled unless the interpreter also has available accurate, detailed information as to the source and the character of the surroundings from which the water came.

Blindness in Babies.

The knowledge that 28.69 per cent. of the blind in the schools for the blind in this country are blind because of sore eyes in the new-born, and the fact that this form of sore eyes is preventable, if ordinary cleanliness and care is observed, is the occasion for the appointment of a committee by the American Medical Association to confer with the State Boards of Health, in an effort to save the babies from the horrors of blindness.

The following circular has been sent to every physician in the state whose name and address we could obtain.

TO PREVENT BLINDNESS IN BABIES.

The average report of ten schools for the blind (in the United States), 1907, shows 28.69 per cent. were due to Ophthalmia Neonatorum.

Doctor Crede, in the Lying-in Hospital of Leipsig, reduced the percentage of Ophthalmia Neonatorum cases from 10.8 per cent. to less than 0.1 per cent. by using correct toilet and a solution of silver nitrate.

METHOD OF PROCEDURE.

1. Keep the discharges of the mother out of the baby's eyes.
2. Wipe the eyes with absorbent cotton moistened in warm boiled water as soon as the head is born.
3. Burn the cotton used; the disease is infectious.
4. Do not include the eyes in the first general bath.
5. Drop into the eyes of the child as soon as it is born a (1%) one per cent. solution of silver nitrate.
6. Keep the eyes clean, using warm boiled water and sterile cotton.

Issued under the authority of committee appointed by American Medical Association in coöperation with the State Board of Health.

H. L. ALKIRE, M. D.,
FRANCIS HARPER, M. D., } *Committee.*
S. J. CRUMBINE, M. D., *Secretary.*

Are you a swatter, or a quitter?

*Air, Food and Water, by Richards and Woodman.

The Common Drinking-cup.

The attorney-general has given an opinion sustaining the right and authority of the State Board of Health to make an order to abolish the common drinking-cup upon the railroad-trains, in the railway stations and the public and private schools of the state. Accordingly the following resolution passed by the Board has been published in the official state paper, under date of July 20, 1909.

Chapter 379 of the Session Laws of 1907 provides that any person or corporation who refuses to obey the rules or regulations when made and published by the State Board of Health shall be subject to a fine of not less than \$50 nor more than \$500 for each offense. Interested parties should take notice. The regulation follows:

WHEREAS, It has been repeatedly demonstrated that the use of what is usually known as the common drinking-cup is dangerous and is an undoubted source of communication of infectious diseases; now, therefore, in the interest of the public health,

Be it ruled by the Kansas State Board of Health:

That the use of the common drinking-cup on railroad-trains, in railroad stations, in the public and private schools and the state educational institutions of the state of Kansas is hereby prohibited, from and after September 1, 1909.

No person or corporation in charge or control of any railroad-train, or station, or public or private school, or state educational institution, shall furnish any drinking-cup for public use, and no such person or corporation shall permit on said railroad-train, or station, or at said public or private school, or state educational institution, the common use of the drinking-cup.

KANSAS STATE BOARD OF HEALTH.

By S. J. CRUMBINE, M. D., *Secretary.*

Typhoid Fever at a Swimming Tank.

An outbreak of typhoid fever at a training depot for marines in England during 1908 was traced to a swimming tank drawing water from the sea, and located between the outlets of two main sewers. The cases of typhoid occurred during the months when the recruits were being instructed in swimming. It was discovered that excreta from typhoid patients had entered the sewerage system on several occasions prior to the outbreak.

To physicians: Typhoid fever is "an infectious disease, dangerous to the public health," therefore all cases should be promptly reported to the health officer as required by the law.

How He "Cleaned" His Berries.

When Dr. Mazyck Ravel, of the University of Wisconsin, a celebrated authority on the prevention of tuberculosis, said, in a meeting before the Indiana state, county and city health officers, that the pronunciation of certain words of the alphabet by persons afflicted with tuberculosis was dangerous because the expulsion of breath accompanying the pronunciation forced microbes from the nose and throat into the outer air, he planted some seeds which have taken root in the mind of at least one housewife who went to the city market yesterday to buy strawberries.

The finest berries she found were for sale by an Italian of nondescript attire and uncertain condition as to the grade of cleanliness both in clothing and person. The housewife looked long at the berries, and, true to her bargain-hunting instinct, decided to look a little farther, in the thought that, perhaps, there might be some better berries at the same price to be found elsewhere.

Evidently the Italian fruit vender believed that he had lost a sale because of the appearance of his strawberries; at any rate, the housewife had gone only a few steps away until she heard a miniature explosion behind her, and, turning about, she saw the vender engaged in picking up his choice berries one by one and blowing his breath on them with all the lung force he could command.

Visions of the word picture drawn by Doctor Ravel flashed through the mind of the housewife, and she returned and took the Italian to task.

"Alla da sand. Blowa off da sand. No sella da sand," was all the information she could get.

It happened that H. E. Barnard, state food and drug commissioner, was in the market-place, and the housewife found him a few minutes later. He was told of the Italian's method of cleaning his berries, and a subsequent threat of being taken to jail stopped the practice.—*Indianapolis News*.

For the past three years a persistent crusade has been waged against consumption among post-office employees in France. Under these efforts, the number of cases has diminished 50 per cent., having been, in 1906, 1048 cases; in 1907, 808 cases, and last year the number fell to 505 cases.

Typhoid Fever Notes.

DETECTION OF TYPHOID CARRIERS.

It has been pretty well established that in the so-called "typhoid carriers" the bacilli lurk in myriads in the gall-bladder, so that a bacteriological examination of the bile of a suspected case would be the surest way of discovering the typhoid carrier. Weber obtains a specimen of bile by introducing 200 centimeters (about six fluid ounces) of olive oil into the empty stomach, and withdrawing the gastric contents half an hour later. The oil sets up a copious secretion of pancreatic fluid, some of which enters the stomach, carrying with it a certain amount of bile. This bile can be detected by well-known chemical tests, and if the person is a typhoid carrier the typhoid bacilli will always be found in the bile. This is a simple procedure, and if its trustworthiness is confirmed by other investigators the control of the spread of typhoid will be the easier.

Typhoid, one of the most loathsome of the many diseases with which human beings are afflicted, is spread in many ways. It is essentially a filth disease. The dairyman who supplies your milk may have an infected well. His cans and bottles are washed with the infected water and this means that the milk will be infected. A person sick with what is known as walking typhoid may spread the infection broadcast. A polluted water supply is not infrequently the source of a community epidemic of this disease.

Flies are recognized carriers because of their habits and because of their presence in the homes. And yet typhoid is one of the recognized preventable diseases. Destroy or abolish the source of infection and the spread of the disease is stopped at once. This means that milk, water and food must be kept untainted, and the dangerous little house-fly must be kept out of all places of human habitation.

And remember that every death from typhoid is due to some one's carelessness, that, in this day of intelligent sanitary administration, is little short of criminal.—*Denver (Colo.) Times*.

There are some who send for the doctor when the thing to do is to clean the house.—*Jonesboro, Ark.*

SUCCESS.

THE men who have achieved success are the men who have worked, read, thought more than was absolutely necessary, who have not been content with knowledge sufficient for the present need, but who have sought additional knowledge and stored it away for the emergency reserve. It is the superfluous labor that equips a man for everything that counts most in life.

—*Cushman K. Davis.*

BULLETIN

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No. 8.

AUGUST, 1909.

VOL. V.

The Kansas tuberculosis exhibit made its debut at Holton on the 23d.

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VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	161	80	42	5	27	4	29	0	28	8		
	187	22	22	4	30	2	61	0	9	1		
Allen	3	3	9	1	1	1	1	1	0	0	19	2
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	3	0	0	0	0	0	0	0
*Barber	1	1	3	0	1	0	0	0	0	0	1	0
Barton	1	1	3	0	1	0	0	0	0	0	1	0
*Bourbon	1	0	1	0	0	0	0	0	1	0	1	0
Brown	2	2	1	0	0	0	0	0	0	0	0	0
Butler	0	0	0	0	0	0	0	0	0	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	5	3	1	1	0	0	1	0	0	0	0	0
*Cheyenne	0	0	1	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	2	0	0	0	0	0	0	0	0	0
Coffey	3	3	0	0	0	0	0	0	0	0	0	0
*Comanche	1	1	0	0	0	0	0	0	0	0	1	1
Cowley	6	6	3	3	0	0	1	0	0	0	0	0
Crawford	0	0	0	0	0	0	0	0	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	0	0	0	0
*Dickinson	0	0	0	0	0	0	1	0	6	0	0	0
Doniphan	4	4	1	0	1	0	3	1	4	0	15	0
Douglas	0	0	2	0	0	0	0	0	0	0	0	0
Edwards	0	0	0	0	0	0	0	0	0	0	0	0
Elk	0	0	1	1	0	0	0	0	0	0	0	0
Ellis	0	0	1	0	1	0	0	0	0	0	0	0
Ellsworth	1	1	0	0	0	0	0	0	0	0	0	0
Finney	3	3	1	0	0	0	1	0	0	0	2	0
Ford	0	0	5	1	0	0	0	0	0	0	0	0
Franklin	0	0	5	1	0	0	0	0	0	0	0	0
*Geary	0	0	5	0	0	0	0	0	0	0	0	0
Gove	4	1	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	1	0	0	0	0	0	0	0	0	0
Gray	0	0	1	0	0	0	0	0	0	0	0	0
*Greeley	0	0	2	0	1	0	2	0	0	0	0	0
Greenwood	1	0	0	0	0	0	0	0	0	0	0	0
Hamilton	0	0	3	0	1	0	0	0	0	0	0	0
Harper	1	1	1	1	1	0	0	0	0	0	0	0
Harvey	0	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	0	0
Jackson	2	0	0	0	2	0	0	0	0	0	0	0
Jefferson	2	0	0	0	0	0	0	0	0	0	0	0
Jewell	0	0	0	0	0	0	0	0	0	0	0	0
*Johnson	0	0	3	0	1	1	0	0	0	0	0	0
Kearny	0	0	1	1	0	0	0	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	3	1	1	1	5	0	0	0	0	0	0	0
Labette	1	0	1	0	0	0	0	0	0	0	0	0
Lane	2	0	1	0	0	0	0	0	0	0	1	0
Leavenworth	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	2	2	1	0	3	0	0	0	0	0	0	0
Linn	1	1	3	0	0	0	0	0	0	0	0	0
Logan	0	0	0	0	3	0	0	0	0	0	0	0
Lyon	3	1	6	0	1	0	0	0	0	0	0	0
Marion	0	0	0	0	0	0	0	0	0	0	0	0
*Marshall	2	2	1	1	0	0	0	0	0	0	0	0
McPherson	2	2	1	1	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	6	1	1	0	0	0	0	0	0	0
*Miami	0	0	0	0	0	0	7	2	0	0	0	0
Mitchell	0	0	0	0	0	0	1	0	0	0	0	0
Montgomery	3	2	6	1	0	0	1	0	0	0	0	0
*Morris	0	0	0	0	0	0	0	0	0	0	0	0
*Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	1	1	0	0	0	0	0	0	0	0	0	0
Neosho	4	2	0	0	0	0	0	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	0	0	0	0	0	0
Osage	2	1	8	1	0	0	0	0	0	0	0	0
Osborne	0	0	4	0	0	0	0	0	0	0	0	0
*Ottawa	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee	0	0	2	0	0	0	0	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	1	0	0	0	0	0
Pratt	0	0	2	0	0	0	0	0	0	0	0	0
*Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Reno	0	0	5	0	0	0	0	0	0	0	0	0
Republic	2	0	0	0	0	0	0	0	0	0	0	0
Rice	1	0	0	0	2	1	0	0	0	0	0	0
Riley	1	0	0	0	0	0	0	0	1	0	0	0
Rooks	1	0	2	0	0	0	0	0	0	0	0	0
*Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	0	0	0	0	0	0	0	0	0	0
Saline	3	1	5	1	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	4	0	0	0
Sedgwick	3	2	8	3	0	0	0	0	0	0	0	0
*Seward	0	0	0	0	0	0	0	0	1	0	0	0
Shawnee	0	0	3	0	0	0	0	0	0	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	1	0	0	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	2	2	0	0	0	0	0	6	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	3	1	1	0	0	0	2	0	1	0	0	0
Thomas	0	0	0	0	0	0	0	0	0	0	0	0
*Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	0	0	1	1	0	0	0	0	0	0
Washington	0	0	0	0	0	0	1	0	0	0	0	0
Wichita	0	0	0	0	3	1	0	0	0	0	0	0
*Wilson	0	0	0	0	0	0	0	0	0	0	0	0
Woodson	0	0	0	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	1	0	0	0	0	0	0	0
Cities:												
Atchison	1	0	0	0	3	0	0	0	0	0	0	0
Coffeyville	0	0	2	0	0	0	0	0	0	0	0	0
Fort Scott	2	1	4	1	0	0	0	0	0	0	5	0
Kansas City	17	13	4	4	2	0	2	0	1	0	6	0
Leavenworth	4	2	2	0	0	0	1	0	0	0	0	0
Parsons	0	0	1	1	0	0	0	0	0	0	0	0
Pittsburg	3	3	7	2	1	0	0	0	0	0	2	0
Topeka	6	0	2	0	2	0	2	0	2	0	1	0
Wichita	8	3	30	4	1	0	0	0	2	0	2	0
State Institutions,	197	0	0	0	0	0	0	0	0	0	0	0

* No report.

Consumption is caused by the poisonous germs in the consumptive's spit. The poisonous spit dries and goes as dust into other people's lungs. A little poisonous spit, when scattered in dust, is enough to infect dozens of people. That is why careless spitting is not only dirty but dangerous.

The Differentiation of Outbreaks of Typhoid Fever Due to Water, Milk, Flies and Contact.

Read before the American Public Health Association at Winnipeg, August, 1908. Re-printed from the American Journal of Public Hygiene, May, 1909, by JOHN F. ANDERSON, Passed Assistant Surgeon and Assistant Director Hygienic Laboratory United States Public Health and Marine Hospital Service, Washington, D. C.

GENTLEMEN: When I received the invitation from our honorable president, Doctor Lewis, to read a paper before this association on the differentiation of typhoid fever outbreaks due to infected water, milk, etc., I fully realized my limitations in dealing with the subject. However, I thought that a few observations I had made while investigating in my official capacity several epidemics of typhoid fever might be of some interest and perhaps profit to you.

It is a serious reflection upon the people of the United States that, according to the census report for 1900, there were 35,379 deaths in the United States that year from typhoid fever—a preventable disease. This loss of life, according to Whipple's calculation, represented money loss to the community of \$212,000,000 for that year alone.

The average typhoid death-rate in cities of the United States is about 35 per 100,000. Whipple states that in cities about 40 per cent. of the typhoid fever is due to water, 25 per cent. to milk, 30 per cent. to contagion (including fly transmission), and only about 5 per cent. to all other causes. The board of officers of the Public Health and Marine Hospital Service, investigating typhoid fever in the District of Columbia, found in 1906 that of the cases studied by them about 11 per cent. were indefinitely attributed to milk infection, about 7 per cent. to infection by contact: in 1907 they definitely attributed about 9 per cent. to milk and about 19 per cent. to contact.

In the study of an outbreak of typhoid fever it is of vital importance, first of all, to determine whether the disease is really typhoid fever. For this purpose, in addition to the usual bedside methods, two other procedures may and should be employed in all doubtful cases. I refer to the Widal reaction and to blood cultures. The blood culture is of more value than the Widal test, in that cultures can be obtained in the first days of the disease. For the examination of the blood we have found the bile enrichment method, followed by plating on Endo medium, the most satisfactory. By this method, cultures taken in the first week of the disease will give positive results in 90 to 100 per cent. of the cases.

Having determined that the disease prevailing with undue frequency is typhoid fever, it is necessary that each case be studied in detail from an epidemiological standpoint. In places which require the reporting of typhoid fever the study is much easier than in those where it is not done. The essential data can only be obtained by competent persons visiting the patients and obtaining all possible information from the patient, nurse and family, and by an inspection of the premises.

It is well to have a map of the city, and as the data for each case are collected to indicate the location on the map by sticking in a large pin. A glance at this will readily show if the cases are confined to any particular locality.

All data collected should be at once tabulated and carefully studied as to the bearing of the various probable sources of infection.

I shall now take up in detail the special characteristics of outbreaks of typhoid fever due to infected water and milk, and to transmission by flies, etc.

CHARACTERISTICS OF OUTBREAKS DUE TO WATER.

The striking characteristics of outbreaks of typhoid fever due to water are —

1. *General Distribution of Cases Throughout the Area Supplied by a Particular Water.*—The incidence of cases is independent of social conditions, occupation and age, except that very young children as a rule are not affected in equal proportion to other ages, due, perhaps, to the difference in susceptibility and to taking less water.

2. *Explosive Onset of the Outbreaks.*—When the water-supply, previously good, becomes suddenly infected, as in the case of Plymouth or Butler, Pa., the outbreak begins with great suddenness and violence. There is a sudden and great increase in the number of cases reported. This increase may continue until the sources of infection of the water are removed or the water-supply changed. If the former be the case there is a more gradual decline in the number of cases than when the supply is suddenly replaced by a pure one, in which case the decrease is sudden and marked. Secondary cases from contacts may keep the number above normal for a time.

When there is a continuance of the source of the infection, as in the case of the Lowell and Lawrence outbreaks of 1890 and 1892, the onset is not usually so explosive in character and the decline is more gradual. In Pittsburg, where there is a continual infection of the water-supply, the disease is more prevalent in the fall and winter, which may be due in part to other causes than water.

When a water-supply, such as a river, is subject to continual infection, the increase in the number of cases in late summer and fall may be attributed to the fact that, as the number of cases increase which supply infection for the stream, the amount of infection is correspondingly increased.

3. *Seasonal Prevalence; Spring or Late Winter.*—Outbreaks of typhoid due to infection of a water-supply previously good usually occur in the late winter or spring. This is due, as in the case of the Plymouth and New Haven epidemics, to the fact that infected discharges are thrown on the frozen ground and when thaws or floods come the infection is suddenly washed into the stream.

When a supply becomes infected by the failure of the purification methods used, or by a change in the source, the outbreak is, of course, independent of season.

4. *Comparative Freedom from the Disease of Persons Not Using the Suspected Water.*—When there is more than one water-supply, or where persons use pure bottled water or boil the water, the comparative freedom of such persons from disease is striking. This was well shown in the Butler epidemic, where a large part of the first ward of the city received their water from deep driven wells; in this ward, with an equal population to the other four wards, there were only about one-half as many cases.

5. *Inspection of the Water-shed Shows Evident Sources of Infection.*—An inspection of the water-shed may show that it is being continuously infected by discharges of typhoid fever cases. In some cases, as at Butler and other

places, the discharges may actually have been allowed to go directly into the stream from privies overhanging it.

6. *The Outbreaks May have Begun or Ended, Following a Change of the Water-supply.*—When a previously good water is replaced for any good reason by an unknown water, or a suspected water is replaced by one of undoubted purity, the consequent beginning or discontinuance, as the case may be, of an outbreak of typhoid would properly be laid to water.

7. *Bacteriological and Chemical Examination Reveals Evidences of Pollution.*—While it is practically hopeless to expect to find the typhoid bacillus in water, still the finding of *B. coli* in small amounts of water and chemical evidences of pollution are additional evidence against the water.

8. *Exclusion of All Other Probable Causes.*—This means the exclusion of milk, food, contact, fly transmission, and other possible sources of infection,

CHARACTERISTICS OF OUTBREAKS DUE TO MILK.

On investigating an outbreak of typhoid fever, the following points would indicate very strongly that the infection was being introduced through the milk:

1. *Sudden Outbreak of an Unusual Number of Cases Followed by a Rapid Decline.*—The outbreak is frequently sudden in its onset, a large number of cases occurring on a certain milk route within a few days. If the infection be introduced only once, as by flies, there is a sudden rise, followed by a sudden decline in the number of cases. If there is a continuance of the infection, as from a bacillus carrier, the onset may be more gradual and the decline will be delayed.

In dairies which do not practice sterilization of bottles, the milk may become infected through bottles delivered at houses where there are cases of typhoid fever; these infected bottles are returned to the dairy, refilled and delivered to other customers. Where the milk becomes infected by washing the cans with infected water, as in the Palo Alto outbreak, the number of cases is usually much greater than when infected in other ways. After the usual incubation period secondary cases from contacts begin to appear.

2. *The Appearance of an Unusual Number of Cases among Customers of a Certain Dairy.*—The appearance of an unusual number of cases without a general increase elsewhere on the route of a dairy should at once direct especial attention to the milk. Of course, typhoid fever due to infection from other sources may occur among persons supplied by a particular dairy, but they will not be found to be chiefly consumers of the milk. It is often very striking how the consumers of a dairy whose milk is infected may be picked out by the unusual proportion of cases on that milk route. Very frequently cases may be traced in persons not directly supplied by the suspected dairy, but who have taken this milk at the home of some friend or at a restaurant. An increase in the number of cases on a certain route, associated with a decrease generally throughout the city, is particularly suggestive of milk infection.

3. *Unusual Incidence of Cases among Users of Milk.*—It will be found that there is unusual prevalence of typhoid fever among the users of milk; the non-consumers escape or develop as secondary cases. As women and children generally use more milk than men, an unusual prevalence of the disease among them is a common feature of milk-borne outbreaks. Those

families on the suspected route who make a practice of pasteurizing their milk escape, except from infection as secondary cases.

4. *More Cases among the Well-to-do than among the Poor.* In a milk outbreak there are usually more cases among the well-off, due to the fact that they are more able to buy milk and use it in larger quantities than the poor, while in fly-borne outbreaks the poor and those living under unsanitary conditions are more often attacked.

5. *The Finding of the Typhoid Bacillus in the Suspected Milk.* This is practically hopeless, as the milk rarely comes under suspicion for at least three weeks after having become infected. In addition, the technical difficulties are so great that it is an almost hopeless procedure, though the isolation of the organism should be attempted. If successful, it is absolutely conclusive.

CHARACTERISTICS OF OUTBREAKS DUE TO CONTAGION AND TRANSMISSION BY FLIES.

It is impossible to state definitely the characteristics of outbreaks of typhoid fever due to transmission by flies and to contacts, as in the case of milk and water outbreaks. A final conclusion in regard to the source of the infection can only be reached by a consideration of all the factors involved.

For purposes of convenience I shall discuss the characteristics of outbreaks of typhoid fever due to contagion and transmission by flies at the same time. The great part played by flies in the transmission of typhoid fever was first emphasized in the masterly "Report of the Origin and Spread of Typhoid Fever in United States Military Camps During the Spanish War," by Reed, Vaughan, and Shakespeare. They concluded that "flies were undoubtedly the most active agents in the spread of typhoid fever. Flies alternately visited and fed on the infected fecal matter and the food in the mess-tents. More than once it happened, when lime had been scattered over the fecal matter in the pits, that flies, with their feet covered with lime, were seen walking over the food. Typhoid fever was much less frequent among members of messes who had their mess-tents screened than it was among those who took no such precaution. Typhoid fever gradually died out, in the fall of 1898, in the camps at Knoxville and Mead, with the disappearance of the fly, and this occurred at a time of year when in civil practice typhoid fever is generally on the increase. The first pits at Knoxville contained, before the first twenty-four hours had passed after the arrival of the troops, fecal matter infected with the typhoid bacillus. Flies swarmed everywhere. Instead of abating, the disease increased. The soldiers were using the same water used exclusively by the inhabitants of West Knoxville, and among the latter there was not at that time a case of typhoid fever. Certainly the disease was not disseminated through the drinking water.^①

Alice Hamilton^① investigated in 1902 an outbreak of fever in the nineteenth ward of the city of Chicago. This ward, which only contained about one thirty-sixth of the total population of the city, had between one-sixth and one-seventh of all the deaths from typhoid fever. It seemed to her that, while the water was undoubtedly the causative factor in the epidemic throughout the city, there must be some local cause for its undue prevalence in the nineteenth ward. The sanitary arrangements in this ward were

1. Journal of American Medical Association, vol. 40, 1902, p. 576.

found to be very bad, and on those streets with the worst sanitary arrangements there were the largest number of deaths from typhoid fever, irrespective of the poverty of the inhabitants.

Flies caught in two undrained privies, on the fences of two yards, on the walls of two houses and in the room of a typhoid patient were used to inoculate eighteen tubes; from five of these tubes the typhoid bacillus was isolated. In this outbreak the chain of evidence implicating the fly in the spread of the disease was certainly convincing and almost complete.

The outbreak in the city of Winnipeg, in August, 1904, investigated by Dr. E. O. Jordan, which was confined almost entirely to the poorer part of the city, was attributed to transmission by flies and contacts.

Outbreaks due to direct contact are seen especially in institutions where there are typhoid fever cases and in houses where the family and friends visit and assist in the care of the patient. In these cases the infection is conveyed either directly by the future patient, or indirectly by the nurse to food consumed by others.

Typhoid carriers, such as the one reported by Soper in the person of a cook, who was responsible for at least twenty-eight cases of typhoid fever in families in whose employ she had been, are instances in which the infection is conveyed by a third person.

The bacilli have been found in practically all of the excretions of typhoid fever cases, and it is only by the most scrupulous care on the part of the attendant that infection can be avoided for himself and others. The board of officers of the Public Health and Marine Hospital Service, studying typhoid fever in the District of Columbia, attributed about seven per cent. of the cases in 1906 and about nineteen per cent. in 1907 to contact infection from other cases.

The chief characteristics, then, of outbreaks of typhoid fever due to transmission by flies and by contact are their local character, their appearance in places where the sanitary conditions are poor or where they are neglected, occurring during the fly season in the case of fly transmission and among those most closely associated with the patient.

Sewage as a Public Nuisance.

The supreme court of Kansas has made a most important decision (handed down recently) in the matter of sewage disposal. The right of a city to create a public nuisance by improper sewage disposal or improper management is denied, and provisions must be made to anticipate conditions that might reasonably be expected to create a public nuisance. There are several cities in Kansas that should "sit up and take notice." The decision follows:

THE STATE V. CITY OF CONCORDIA.

No. 15,408.

1. The power granted to cities of the second class to build and maintain sewers does not warrant the commission of a public nuisance through their agency.

2. The statute of 1887 providing that cities of the second class may exercise the right of eminent domain in order to connect sewers with creeks,

rivers and ravines does not warrant the commission of a public nuisance as the result of such connection.

3. In planning and in maintaining systems of sewerage cities of the second class must make due provision against public nuisances resulting from occurrences naturally and reasonably to be anticipated.

After quoting a large number of decisions from other courts bearing on the case, the court says:

If the legislature authorizes or directs something to be done by a city it will be presumed no nuisance was intended unless such as be the natural and necessary result of the work.

The act of 1887 conferred no new power on the city by declaring that it should have authority to lay sewer-pipes and drains and connect them with any creek, river or ravine as an outlet. It had that power without the statute. (10 A. & E. Encycl. of L., 2d ed., 337.) The declaration of the power was made merely for the purpose of attaching to it the right of eminent domain. The obligation to avoid committing a public nuisance was not weakened.

It cannot be the law that this act authorizes a city to pour the contents of its sewer mains into any dry ravine it may find convenient to its borders, infect a populous neighborhood with disease, and then in an action to abate the nuisance exculpate itself by the simple answer: "The sewers were connected with a ravine." Perhaps some sewage may properly be emptied into a ravine, but manifestly the thought of the statute is that ravines may be utilized for drainage. Cities may lie in close proximity to each other on the banks of a river. It is impossible to believe that any one city may empty all the filth of its sewers at the intake of another city's water-supply, and then justify by saying: "The sewers were connected with the river." A city has no right arbitrarily to select the point of outlet for its sewers regardless of the public health and comfort. It may take its sewers to the river, but it must not be indifferent to the very interests to be subserved in building sewers.

There is nothing unusual about the fact that the water of the Republican river changed to another channel. The valleys of Kansas are filled with channels, old and new, from which the water of the rivers has departed. The effect upon the sewer in question is the same as if a sand-bar had blocked the mouth of the sewer, dammed up its contents, and caused them to overflow the streets; or as if a bar had formed opposite the mouth of the sewer in such a way as to form a foul and pestilence-breeding basin. In planning and in maintaining any sewer system provision must be made for that which naturally and reasonably may be anticipated.

The petition is such that the court does not know what facts may be relied upon to show that the city is at fault. Assuming that a public nuisance exists, the first count of the answer states no defense.

The judgment of the district court is reversed and the cause is remanded for trial.

All the justices concurring.

If you are in doubt, boil the water.

Human Excrement ~~Must Not Be~~ Put in Streams.

Under the above heading, in the July issue of the *Bulletin* of the Montana State Board of Health, is published the opinion of the supreme court of that state upholding the authority and right of the board to prevent the pollution of the natural waters of that state by domestic sewage. The principles of the police powers of boards of health in safeguarding the public health are forcefully and clearly enunciated, the relation of individual right to that of the citizens of the state at large is sanely presented, and the moral or legal right of a city to dangerously pollute a stream that is used by a city below as a source of public water-supply, is denied. It is by this token that the natural waters of the state of Kansas will be preserved from further pollution. The decision follows:

Mr. Justice Holloway delivered the opinion of the court:

In 1897 the city of Miles City installed a sewer system for the purpose of carrying off the sewage of the city. The outlet of the main sewer was then, and ever since has been, in a slough which is in fact an arm or branch of the Yellowstone river. At the time of the installation of the sewer system, and for a long time thereafter, water flowed through this slough during most of the time in quantities sufficient to carry this sewage from the outlet off into the main channel of the Yellowstone river; but during the last few years the head or intake of this slough has become so far obstructed that only during high-water seasons is there sufficient water flowing through the slough to carry off the sewage, and for considerable periods of time this sewage accumulates in the slough near the outlet of the sewer, and during such periods is a constant menace to the health of the inhabitants living near such outlet. To obviate the difficulty, Miles City, in 1908, prepared to extend the main sewer from its present outfall in the slough, on some distance, across an island, with the purpose of there discharging the sewage directly into the Yellowstone river, without having purified the sewage in any manner. Acting upon information furnished it, the State Board of Health called a meeting of the board to consider the matter, and notified the city, which was represented at such meeting by its attorney. At that meeting there does not appear to have been any testimony taken, but the board made an order which recites the calling of the meeting, the appearance of the city by its attorney, and then proceeds: "And it appearing that said river is used as a source of water-supply for domestic use by persons residing along said river below Miles City, and within four days of the natural flowage of the waters of said river, and the said board being fully advised in the premises, and having fully considered the matter, finds and determines that such discharge of said sewage into the Yellowstone river will produce such an unsanitary condition and be such a pollution of the waters of said stream as to be dangerous to public health, and believing that the same is contrary to law, wherefore, it is by the State Board of Health of the state of Montana here ordered that the extension of the outlet of the

sewer system of Miles City, Mont., be and the same is hereby prohibited. And it is further ordered and directed that the said Miles City, at as early a date as practicable, dispose of the sewage of said city in some sanitary manner acceptable to the State Board of Health."

From that order of the board the city appealed to the district court. In perfecting its appeal the city, through its attorney, prepared a statement of facts and added thereto the grounds upon which the city objected to the order. This statement has since been treated substantially as an agreed statement of facts. In the district court there was not any evidence produced, but counsel for the respective parties stipulated that the slough into which the present sewer system discharges is a branch or part of the Yellowstone river, and that the only effect of the proposed change would be to alter the point of discharge of the sewer system. Upon this stipulation having been made, the district court entered judgment annulling the order of the Board of Health, and from that judgment the board has appealed to this court. Since the decision of the district court does not indicate the ground of the court's ruling, the specifications contained in the city's statement on appeal to the district court are presented here, and while they are six in number they really present but two principal contentions.

1. It is said that the State Board of Health did not hear testimony to determine whether the sewage discharged into the Yellowstone river would pollute the waters of the river. Assuming this to be true, it is not a valid objection to the order made by the board. Section 8 of chapter 177, Acts of 1907 (sec. 1566, Revised Codes), authorizes the board to make, or cause to be made, a thorough investigation in a case of this character; and if in the judgment of the board the public health so requires, the board may make such an order as the one now under review. This section does not contemplate a public trial, but rather an *ex parte* investigation, and the legislature, being the repository of the police power of the state, could designate the State Board of Health as its agent and prescribe the manner in which such police power should be exercised. As a precaution, however, against any injustice, section 10 of the act (sec. 1568, Revised Codes) provides that any party aggrieved by the order may appeal to the district court. If the board, then, informed itself by any means, the fact that testimony was not taken is altogether immaterial. The order recites that the board was fully advised in the premises and found that the sewage discharged into the river would pollute the water to such an extent as to produce an unsanitary condition—one dangerous to the public health.

Counsel for the city misapprehended the scope of this statute. The prohibition is against the pollution of the waters of a stream which is the source of water-supply. Assuming for the purposes of this appeal, as counsel did upon the oral argument, that the reference in the order of the board is to the city of Glendive particularly, and assuming further that the intake of the Glendive water-supply is many miles below the outfall of the Miles City sewer, the order of the board, on its face, is still justified; for the prohibition is not directed against polluting the waters of a river at such intake alone, but applies equally against polluting them at such outfall. The prohibition is against polluting the waters at any place within the state, and it is therefore wholly immaterial that the putrescible constituents of the sewage are not carried to the intake of the Glendive water-supply, if

such be the fact. The state, in the valid exercise of its police power, has said by this statute that hereafter no polluting sewage and no human excrement shall be discharged into any stream which is the source of water-supply for a city or town, until such deleterious matter is rendered harmless by some means of sewage purification acceptable to the State Board of Health. In *City of Durham v. Eno Cotton Mills*, 141 N. C. 615, 54 S. E. 453, the court had under consideration a similar statute and reached the same conclusion which we have indicated above. In this case there is also considered at great length the general subject of police regulations, sustaining the views hereinafter set forth.

2. It is further contended that the city of Miles City has acquired by prescription the right to discharge its sewage into the Yellowstone river. The seriousness with which counsel for the city have urged this impels us to give it attention. The cases cited in their brief, however, do not sustain them. Those cases refer to rights acquired as against private individuals; but when the city asserts that it has acquired such prescriptive right as against the state, and that it is a right of such character as that against it the police power of the state cannot be invoked, it assumes an altogether unique position. In the first place, a city is but one of the governmental agencies of the state, and as such agent it could not acquire the right by prescription; for the elements of adverseness, exclusiveness and claim of right are absent during the entire period of the city's use of the river; and those elements are essential to the establishment of a right by prescription. (*Talbot v. Butte City Water Co.*, 29 Mont. 17, 73 Pac. 1111.) Furthermore, the right which the state is attempting to assert through the agency of the State Board of Health is a public right—a right to protect the health of the people of the state—and as against such public right prescription does not run. (*Commonwealth v. Moorhead*, 118 Mass. 344; 22 Am. & Eng. Encyc. Law, 2d ed., 1109.) There is yet another reason why the city cannot acquire such a right by prescription as that against it the state may not invoke its police power. It is now generally conceded that the police power is such a power, inherent in the state for the protection of the public, that the state may not waive, or divest itself of, the power to exercise it. (*In re O'Brien*, 29 Mont. 530, 75 Pac. 196; 8 Current Law, 36; *Portland v. Cook*, 48 Ore. 550, 88 Pac. 772; 1 Abbott on Municipal Corporations, 209.) It would seem to follow, then, as a matter of course, that notwithstanding the length of time the city has enjoyed the privilege of discharging its sewage into the river, the state may, in the interest of the public health and safety, regulate such use, or, if necessary, prevent the continuance of it. Indeed, if the state had consented to the use of the Yellowstone river by Miles City for the purpose of discharging its sewage therein, such consent would not have amounted to more than a license which the state might revoke whenever public interests require it. (*Portland v. Cook*, above.)

But if it was possible for the city to have acquired the right which it asserts, that fact of itself would not preclude the state from enforcing any reasonable police regulations, even though such regulations called for an abandonment of the right asserted in the manner asserted; *for all property is held subject to the right of the state to so regulate and control its use as to secure the general safety and public welfare.* (*City of Helena v. Kent*, 32 Mont. 279, 80 Pac. 258; *Cooley's Constitutional Limitations*, p. 830.)

And in the proper exercise of this police power one may even be restrained from doing a thing in itself lawful and right (*City of Butte v. Paltrovitch*, 30 Mont. 18, 75 Pac. 521), or may have his property destroyed, even though he himself is not at fault. (Cooley's Constitutional Limitations, p. 878.) In fact, the reason for the exercise of this power finds expression in the two maxims, "*sic utere tuo ut alienum non laedas*," and "*salus populi suprema lex*."

This statute does not deprive Miles City of any property right. It does not forbid the city using the Yellowstone river for the purpose of discharging its sewage, providing the sewage has been subjected to some practical means of purification. The statute looks only to a proper regulation of the use asserted, and not to a denial of the use; and the mere fact that the city was making use of the river for discharging raw sewage into it at the time this statute was enacted, which modifies such use, is not any valid objection to the statute. (Cooley's Constitutional Limitations, 7th ed., chap. 16; *Health Department v. Rector*, 145 N. Y. 32, N. E. 833.)

The judgment is reversed and the cause is remanded to the district court with directions to proceed to a hearing with the cause, in conformity with the views herein expressed.

Reversed and remanded.

(Signed)

WM. L. HOLLOWAY, *Associate Justice*.

We concur:

(Signed) THEO. BRANTLY, *Chief Justice*.

HENRY C. SMITH, *Associate Justice*.

Report of the Committee on "Pollution of Streams."

Presented at Conference of State and Provincial Boards of Health,
Washington, D. C., June 5, 1909.

To the Conference of State and Provincial Boards of Health of North America, Washington, D. C.:

GENTLEMEN—Your Committee "On the Pollution of Streams" beg to submit the following report:

The matter of the pollution of our streams and lakes by sewage and by industrial wastes is one which has been brought sharply to the attention of those interested in the protection of the public health.

The easy and usual method to dispose of sewage in this country has been to discharge it into the nearest stream or body of water without any regard to whether the stream was used as a public water-supply by some other municipality. The result of the rapidly increasing population of our cities and villages, combined with the tremendous growth of industrial enterprises, has been to pollute many of the streams and bodies of water very seriously.

We find that:

1. There have been many epidemics of typhoid fever directly due to this practice.
2. In many cases public nuisances have been caused.
3. The waters have been rendered unfit for use for domestic, and in some instances for manufacturing, purposes; the rights of riparian owners are seriously affected; fish life has been destroyed; the waters ruined for boating and bathing, and rendered objectionable and obnoxious in other ways.

There being no provision of the constitution of our government giving Congress any authority over the subject, the states of the Union retain jurisdiction over the pollution of our waters. In this work these states are classified according to the statutory restrictions in three grades: First, states with partial restriction; second, states with general restrictions; and third, states with severe restrictions. Class 1 (states with partial restrictions) comprises those states and territories in which the legislature has confined itself to prohibiting the poisoning or pollution of drinking-waters in certain ways or in certain localities. This comprises a list of seventeen states. Class 2 (states with general restrictions) is composed of those states and territories in which the importance of pure water for every inhabitant for drinking and domestic purposes has received legislative recognition, and includes a list of twenty states and territories. Class 3 (states with severe restrictions) consists of those states which have adopted intelligent and stringent methods to enforce the rights of their citizens to unpolluted natural waters, and includes eight states.

Since this report was published, in 1905, the states of California, Indiana, Kansas, North Carolina, Vermont, Wisconsin, Ohio and New Jersey have made important amendments to their laws with reference to pollution of streams, and several of these states would now probably be included in class 3 as having severe restrictions. The new laws of Ohio, New Jersey and Kansas are especially worthy of note, as indicating advancement and the confidence which the legislatures of these states must feel in the work of the state boards of health.

The progress of the work of freeing our streams from pollution and advancing a proper purification of sewage in this country is shown in the reports in the hands of your committee from the secretaries of our state boards of health, and it may be interesting to note what some of our states are doing. This report will only attempt to touch a few of them briefly. The work of the Massachusetts State Board of Health is familiar to all of you and their studies have assisted very much in other states. In one of their recent reports it is stated that—

“The most objectionable condition that may result from the discharge of sewage into streams or other inland waters is the pollution of a source of water-supply. In Massachusetts the use of the larger rivers as direct sources of public water-supply without purification has practically ceased; but polluted river waters are still, in many cases, used for washing and other processes in factories and mills, where they are available for drinking and sometimes so used.”

Again they state:

“Of the ninety-two cities and towns in this state having systems of sewerage, four cities and nineteen towns employ some form of treatment for the removal of organic matter from the sewage.”

In New Jersey the State Sewerage Commission has been abolished and its powers conferred on the State Board of Health. There are fifty-four purification plants installed and in operation or ready to be put in operation at municipalities and large public institutions in the state. The policy is to allow no untreated sewage to be discharged from new systems into the waters of the state. They are also compelling municipalities to install purification plants on existing sewerage systems. Twenty-two are now under orders to cease to pollute the streams.

All municipalities and individuals in New Jersey discharging raw sewage into the Delaware river are under orders to cease doing so.

Ohio has an excellent law with reference to stream pollution, and the State Board of Health has already been called upon to investigate eighteen complaints under the act, and has under its provisions and under authority of the governor and attorney-general ordered sewage-disposal works installed in four of the cities, the work to be completed before January 1, 1910.

In Michigan there are several cities and villages using septic tanks, and the State Board of Health, in cooperation with other bodies, has urged proper legislation for the control of public water-supplies and the proper disposal of sewage wherever sewers are constructed or extended.

The California State Board of Health is constantly working with cities and towns to purify their sewage, but they state that their streams are so large that dilution in most cases prevents serious trouble. Their attitude is, however, against sewage being allowed to enter the streams, and it is evident that they are thoroughly awake to the danger of allowing the rapidly increasing population of the state to discharge their raw sewage into the waters without proper treatment.

In Florida it is stated that many of the towns and cities in the state, particularly of the interior, use sewage filtration plants. Three cities discharge into tidal waters.

In Maryland many of the larger towns maintain sewage disposal plants, also the larger institutions, and there are quite a number of private plants in the suburban districts around Baltimore. About 120 restraining orders have been issued against municipalities and corporations during the past year by the State Board of Health, and numerous recommendations made for systematic control of the sewage-disposal plants and water-supply. It is reported that the largest rivers of the western shore are polluted, some badly, and that the legislature has required the city of Baltimore to purify its sewage before discharging it into Chesapeake Bay. The secretary recommends that state boards of health be given power to set aside streams for the disposal of sewage and waste products and fix standards of purification and prevent the use of streams for water-supply and sewage disposal without their approval.

The Rhode Island State Board of Health has published a most interesting report on the results of the examination of the conditions causing the pollution of the Moshassuck, Woonasquatucket and Providence rivers, in the state of Rhode Island, made conjointly by the United States Geological Survey and the Rhode Island State Board of Health. The report shows careful study of the amount and character of pollution entering into the streams, the pollution of which has reached a point which demanded attention.

In New Hampshire all of the cities and a few villages discharge raw sewage into the rivers of the state. There is not a single sewage-disposal plant in operation, but the State Board of Health, by authority conferred upon it by law, has prohibited the pollution of several of the lakes and streams from which public water-supplies are taken. The State Board of Health reports that none of the streams, with the exception of the Merri-mac and the Connecticut rivers, can be said to be badly polluted.

Indiana's new anti-pollution law was passed this year, and forbids the pollution of the streams, and places the enforcement of the law in the hands of the State Board of Health. It is stated that the problem of the future water-supply of the cities in Indiana is a serious one, as water must be secured from the streams as the ground-water supply is gradually giving out, except in the northern part of the state, which is yet a lake region.

Texas reports that the State Board of Health will very soon give the question of the pollution of their streams serious consideration. Houston, Tex., has a disposal plant five miles out of the city, to which the sewage is pumped. There are fifteen acres of coarse sand filter-beds. They state that the question of pollution has not been a very serious problem, owing to the scarcity of population, but is becoming more serious. Their views are that they should begin protecting the streams of the state at once.

Wisconsin aims to forbid absolutely the discharge of crude sewage into any of their waterways. Septic tanks and filter-beds are used quite extensively, especially in plants which have been recently constructed.

The State Board of Health in Vermont in 1904 ordered that no sewage should be discharged into any stream or body of water without their permission. They say that they believe the pollution of streams to be a very serious menace to the health of the people of the various states and that they have, in five cities and villages in Vermont which were taking their water-supply from polluted sources, prohibited the use of the water-supply and directed that they should secure water from an approved pure water-supply within a given time.

Colorado reports that they have been unable to secure needed legislation. Water is taken from streams for irrigation and is polluted when returned.

Minnesota has failed to get legislation along these lines. The pollution of the streams and lakes is gradually growing worse. Two marked typhoid epidemics have resulted from this cause.

Kansas reports that they have about fifteen disposal plants in operation in the state, or about to be installed, all of the septic tank and filter-bed types. They have a very strong and workable law. The principal difficulties encountered are from mines, smelters, oil-refineries, and creameries. They are opposed to the discharge of any raw sewage into the waters of the state.

In New York many of the streams are very badly polluted and the condition presented is a very serious one. There are about fifty disposal plants in operation, and the requirement of the State Department of Health is that cities extending their sewer systems or building new sewers shall make provision for sewage purification, and that such plants shall be put in operation within the time limit in the permit granted.

A careful study has been made during the past year of the effect of pollution on the immense oyster industry around Long Island, where investments of millions of dollars are threatened; and the question of the spread of typhoid by this means is still an open one, involving further research to determine satisfactorily.

The reports received by your committee show that the practice of discharging raw sewage from the cities and villages of this country into the waters of the states is very general and wide-spread, and that the amount of pollution received by many of our streams and larger bodies of water is

enormous. There are, however, a considerable number of sewage purification plants in operation in different states and evidence at hand to show that quite a large number will be built within the next few years, and that in those states where the state boards of health have sufficient statutory authority they are requiring that such plants be established in many instances.

There is undoubtedly a very wide-spread erroneous idea in regard to the practice of placing sewage into waterways, many persons assuming that it is a proper and just use of our streams. Municipalities are subject to the same restrictions as individuals and have no right to pollute a stream, and cannot acquire a right to do so by a continuation of the practice. Where authorized by statute to discharge sewage into a stream the right must be exercised subject to the implied condition that such discharge will not create a public nuisance. The rights of riparian owners can be sustained in the courts. Some of the Western states have abrogated the doctrine of riparian rights by what is known as the doctrine of prior appropriation.

It is evident that the subject is one which has been considered by the various state boards of health carefully, and that they only lack the necessary authority and funds to make active progress along these lines. They are handicapped in this, as in their other activities, by the general indifference of the people to public-health questions. In every state of the Union thousands of dollars are annually appropriated for purposes insignificant as compared with the protection of public health, yet in but few instances have the health authorities of a state been able to get funds to do the work which they saw immediately before them. We have not yet reached that point where public health is considered as it should be, and it is a sad commentary on our civilization that we allow preventable diseases to inflict their enormous loss on the country. The responsibility rests upon the legislative bodies which have generally failed to pass proper laws and which refuse adequate appropriations for carrying on the work.

There are, of course, special problems in some of the states where there are large industries, such as paper- and pulp-mills, tanneries, mines, canning factories, smelters, distilleries, beet-sugar and starch factories, and other industrial establishments discharging wastes that present difficult problems in their treatment.

In studying this question we should consider the effect of pollution on streams used as public water supplies, and its effect on those used for other purposes. There are perhaps some streams which can safely be set aside for use as sewage carriers for the present, but the desirability of so doing may be open to question. In some cases water has a value for manufacturing purposes which may be affected by pollution. In certain localities we must consider the effect of pollution on the oyster industry, and here also a public health question as well as an economic one is involved.

A careful study of the watershed of a stream, of its use and of local conditions must be made in order to determine the proper course to pursue.

RELATION OF WATER SUPPLY AND STREAM POLLUTION.

The influence of stream pollution on the typhoid death-rate in this country is apparent to every one at all versed in our vital statistics. Repeated epidemics of typhoid in different cities, caused by the use of sewage-polluted waters for potable supplies, have convinced even the most ignorant laymen of the dangers of this practice.

The construction of water filtration plants has caused such an immediate and noticeable drop in the typhoid death-rate in many cities that their use has not only had the effect of preventing sickness and death, but has also had an educational effect as teaching the value of pure water. Where surface supplies are used without proper filtration the influence of sewage pollution is shown in a very marked manner. It is undoubtedly true that in many places a proper filtration of surface supplies is probably all that is needed at the present time to protect their purity, and that with such safeguards upon the municipalities using the water sewage can continue to be discharged for some time to come. At other points, however, and eventually with some of the places in the above class, there must be in addition to the filtration of the water a proper treatment of the sewage before it is discharged into the stream from which the supply is taken. The tendency seems to be in favor of a better filtration of water supplies rather than a higher degree of purification for sewage.

The most important aspect of this question is, of course, its relation to public health. That a large amount of typhoid in this country is caused by the pollution of our waters cannot be disputed. The United States census of 1900 states that during that year there were 35,379 reported deaths from typhoid in the United States. Whipple says that, estimating each one to represent a loss of capital to the community of \$6000, the total amount is found to be \$212,000,000, and that probably three-fourths of these deaths could have been prevented, and that there was a needless loss of vital capital of about \$150,000,000.

The report of the Census Bureau for 1907 states that "The mortality of the United States from typhoid is much higher than that of the United Kingdom, Germany, Sweden or Switzerland and a number of other European countries, and should be subject to marked decrease in future years when greater attention shall be paid to the removal of the causes contributing to typhoid infection." It is to be hoped that a very marked decrease will be made in these figures in the next few years, and this will undoubtedly be done if the teachings of sanitary science prevail.

OTHER ASPECTS OF THE QUESTION.

The question of the conservation of our national resources is one which has received considerable attention since the conference called by President Roosevelt. We are at present all of us engaged in preaching the doctrine of fresh air and out-door life in the treatment of tuberculosis, and we realize its value to the human system in health or sickness, and we fully appreciate the value of out-door sports and life in the open in its influence on the health of our people.

The fact that many of our streams and lakes have been ruined for boating, bathing and fishing by reason of their pollution cannot be else than a material loss to the people at large and a serious diminution in the value of the resources of the country. In the Adirondacks, the playground of the state of New York, a large part of which belongs to the state, the pollution by pulp-mills and from other sources is very noticeable at many points.

We have in this country proceeded so far with a reckless disregard of the future. We have despoiled our forests, sacrificed many of our natural advantages, and saved nothing for the future. That a different policy must be adopted is apparent to every one. It is very probable that many of our

cities must eventually look to other sources for their water-supplies, and a far-sighted policy would consider this and aim to provide such sources as free from pollution as may be necessary.

INTERSTATE STREAMS.

There are difficult questions presented in handling this problem by reason of the fact that many of our streams flow through a number of states, and that the pollution of these streams and of lakes bordering on several states cannot be prevented by the operation of any individual state. The desired end might be attained by agreement between the states, but owing to differences in the statutes such an agreement would be difficult of execution. Something of the kind has already been done by the states of Pennsylvania and New York in relation to the Susquehanna river, and a conference has been held between the states of New Jersey, Pennsylvania and New York with reference to the Delaware river. The question of pollution of interstate streams has interested the Ohio officials very much on account of their relation to the Ohio river. The legislature of the state of Ohio passed a joint resolution providing for a commission to recommend measures to prevent the pollution of the Ohio river, and requesting the legislatures of the states of Pennsylvania, West Virginia, Indiana and Kentucky to coöperate by appointing similar commissions. The attorney-general of the state of Ohio has recently passed upon the question of the jurisdiction over navigable streams vested in the Congress of the United States and in the legislatures of the several states, and he has held that, as to the pollution of navigable streams by municipalities, the federal government does not attempt to control or in any way regulate the same, but recognizes the jurisdiction of the several states so to do. The jurisdiction of the federal government would seem to be limited merely to insuring open navigation, and that it has no authority at present to prevent the pollution of our waters.

New York state has a special commission studying the pollution of New York harbor. An interesting question has arisen there by reason of the attempt of New Jersey to discharge the Passaic Valley sewer into the harbor. New York objects to this and the matter is now in the courts, having been before the War Department.

Wisconsin states that the death-rate from typhoid and diarrheal diseases in practically all the states bordering on Lake Michigan and Lake Superior, is high and that they feel that there is urgent demand for action to prevent the further pollution of these lakes.

The question of the pollution of the Great Lakes is well worthy of study as bearing on this question. In this connection should be noted the report of an investigation made by the State Board of Health of Michigan of the water of the St. Clair river. The *Marine Review* has estimated the passengers carried on the Great Lakes during a single season as 10,000,000. The typhoid death-rates of all cities using these lake supplies are high and a commission consisting of a surgeon of the Marine Hospital Service, a representative of the War Department, three from Chicago, appointed by the mayor, two from Milwaukee, and one each from Illinois, Wisconsin, Indiana and Michigan, appointed by the governors of those states, has reported upon the pollution of Lake Michigan. General Wyman states that the entire investigation is of vast interest to the federal government because of its

bearing on interstate commerce, and it should receive the active cooperation of the department and there should be legislative action authorizing the service to undertake the investigation of similar interstate bodies of water.

RECOMMENDATIONS.

After a careful review of the important questions involved, your committee begs to make the following recommendations:

First.—That inasmuch as any discharge of organic matter into streams used as public water-supplies is dangerous to public health, we recommend that such practices be disapproved.

Second.—That as an excessive discharge of organic matter into a stream creates a public nuisance, restricting its normal use and enjoyment, we recommend that partial purification be practiced in such cases.

Third.—That the state boards of health here represented present at every opportunity, to the people generally, the importance of the questions involved, and that those states not having effective legislation covering the subject shall endeavor to secure the same, with proper appropriations for conducting the work.

Fourth.—That the control of this work shall be placed in the hands of the state boards of health.

Fifth.—That the federal government be given such control that it may be in a position to assist the states in studying special problems, and that the conference heartily endorse the proposed bill giving the surgeon-general of the United States Public Health and Marine Hospital Service authority to investigate these questions as being a step in the direction of federal control in the prevention of the pollution of our streams and lakes.

Your committee desires to express its appreciation to the secretaries and other officers of the state boards of health for information furnished and for courteous replies to inquiries.

Respectfully submitted.

ALEC H. SEYMOUR, *Chairman.*

Secretary New York State Dept. of Health.

C. O. PROBST, M. D.,

Secretary Ohio State Board of Health.

H. D. HOLTON, M. D.,

Secretary Vermont State Board of Health.

Copper Sulfate Treatment.

By IRVING C. BULL, Chemical Expert, New York City.

Algæ growths have given water companies much concern during recent years and their removal has been accomplished by different methods with varying results. A growth of algæ renders a water-supply unsuitable for domestic purposes even where highly efficient filtration plants are being operated. Filtration is not a remedy for rendering water-supplies entirely free of disagreeable odors and tastes.

The most common form of algæ which is found gives to the water a fishy taste and odor, which gradually increases in intensity as the season advances. This growth may appear at almost any

season of the year, but the spring and summer months are the most probable times for these objectionable growths to appear in the water.

At Middletown, N. Y., we have treated with success the different water-supplies for the past four years for the removal of algæ by the means of copper sulfate. These growths have always been those producing a fishy taste and odor. Copper sulfate has been the only method used at that place. It has been applied in strengths varying from one part of copper sulfate in one million parts of water, to one part in four million parts. The amount to be used must first be carefully determined, the amount depending upon the following conditions: The character and amount of algæ growth, the hardness of the water and the temperature of the water at the time of treatment. Too much or too little copper sulfate will greatly influence the efficiency of the treatment. When the proper amount has been determined and applied, the progress of the treatment will depend somewhat upon the character or kind of growth; the effect being noted in some cases as soon as three days and a total improvement at the expiration of ten to fourteen days.

The method used in applying the copper sulfate is, briefly, as follows: The copper sulfate is placed in bags of not too fine texture, about fifty pounds of copper sulfate to each bag. One bag is placed over either side of a boat, which is then rowed about, giving an even distribution of the copper sulfate. Where the growth appears the most abundant an extra bag is placed in the water over the stern of the boat. It is always necessary to secure an even distribution of the copper sulfate as quickly as possible.

Our experience with the three reservoirs at Middletown has been that the trouble from algæ growths has not always been due to the same forms of algæ; also, that the growths have not appeared at the same time of the year. During the present year trouble was experienced with reservoir No. 1, supplying the gravity system of filters. The growth here appeared in March and rapidly increased until the water was unfit for domestic use within two weeks' time. A copper sulfate treatment was at once recommended. The treatment was immediately made by order of the president of the water commissioners, and within ten days' time the water was back to its normal condition, free of all of its objectionable qualities. The growth this year was the earliest one which we have experienced at Middletown during our five years' service with that board. Previous to this year the first growths have been noted during the latter part of May and the first part of June.

In addition to the removal of the algæ growth, there is another advantage in the treatment which at once presents itself. This is in the operation of mechanical filtration plants. When the growth begins to increase to any marked extent in a water-supply which is being filtered, the accumulation of the vegetable growth upon the filter-beds becomes so great that it immediately stops the progress of filtration, and washing of the filter-beds is at once necessary; three or four times the normal number of washings being often necessary. This, of course, increases the cost of filtration, as well as lowers the twenty-four-hour filtration efficiency. After a copper sulfate treatment this accumulation of vegetable matter stops and the filters do not demand the extra amount of washing.

As to the proper time of treatment of water-supplies, we would suggest that the most efficient results are to be obtained at once, as soon as any indications are noted of an algæ growth. When the growths are allowed to advance the treatment must be necessarily stronger, and our experience has been that the excellent results are not so quickly obtained. It is not well to wait when growths are expected, but the trouble should be at once determined by careful examination.

In conclusion, it is to be understood that objectionable odors and tastes are not always due to algæ, but may be due to many other causes, as water is an excellent absorbent of gases, odors, etc. Therefore, copper sulfate treatment cannot be considered a universal method for eradicating odors in water-supplies.

The Lengthening of Human Life.

In an address before the Association of Life Insurance Presidents, Prof. Irwin Fisher, of Yale University, declared that human life is long or short precisely according to the hygienic conditions under which it is lived. He showed from data secured from acknowledged American authorities that human life in America could, by the adoption of hygienic reforms already known and entirely practicable, be lengthened by over one-third. He contends this calculation to be very conservative and probably several years inside the truth. Take, for example, what may be accomplished in the matter of supplying pure and wholesome water in reducing the death-rate and thus lengthening the average expectancy of life. The experience in Lawrence, Mass., has shown that the introduction of an efficient water-filter reduced the typhoid mortality by eighty per cent.; twenty years of vigorous anti-tuber-

culosis crusade in New York city has cut the mortality from that disease in half; and so illustrations might be multiplied concerning all preventable diseases.

It has long been known that there is no iron law of mortality, but that mortality depends on the hygienic state of the community. Baines, in a recent paper in the Journal of the Royal Statistical Society, has calculated that the average duration of life in India is only twenty-three years for males and twenty-four years for females, or less than half the life-span in the advanced countries of Europe. The estimates of Finkelnburg show that in Europe human life has probably doubled in the last 350 years.

More recent and more reliable figures show that life is lengthening to-day more rapidly than ever. If we take life tables for different periods for England, France, Prussia, Denmark, Sweden, and Massachusetts, we find that human life lengthened during the seventeenth and eighteenth centuries at the rate of four years per century; that during the first three-quarters of the nineteenth century it lengthened at the rate of about nine years per century; that at present it is lengthening in Europe generally at the rate of seventeen years per century, and in Prussia (which is perhaps the home of preventive medicine) at the rate of twenty-seven years per century. For this country the rate can only be judged from the statistics for Massachusetts, which show that life is lengthening by about fourteen years per century, or approximately half of the Prussian rate. These rates may not continue in the future, but the opinion of our best authorities on longevity, such as Ray Lankester and Metchnikoff, is that there is still great room for improvement, especially after middle life. Hitherto almost all the improvement has applied to ages before fifty, and only the most recent figures show any tendency toward improvement beyond that age. It is significant that backward India, in spite of the enormous room for improvement, shows during twenty years no rate of improvement whatever.

A New One on the Inspector.

The *Inland Printer* (Chicago) says the following happened at Atchison: A pure-food inspector complained to the proprietor of a restaurant that he had found hair in the honey, hair in the apple-sauce, and hair in the sherbet. "That is queer," said the proprietor. "The hair in the honey must have come from the comb; the hair in the sherbet must have come from shaving the ice, but I can't understand how hair got in the apple-sauce, for I picked the apples myself and they are all Baldwins."

Hookworm Disease in its Relation to the Negro.

From "Public Health Reports."

An abstract of an address recently given before the Hampton Negro Conference at Hampton Institute, Hampton, Va., by CH. WARDELL STILES, Ph. D., Chief of the Division of Zoölogy of the Hygienic Laboratory, United States Public Health and Marine Hospital Service.

CAUSE OF HOOKWORM DISEASE.

Hookworm disease is caused by the presence of small worms belonging to a group of roundworms known technically as *Uncinariidæ*. Two different kinds of hookworms occur in man. One of these is known popularly as the "Old World hookworm," the other as the "New World hookworm." Both of these parasites are known to occur in Africa, the home of the negro, and both have been found in the negro. The Old World hookworm is relatively rare in the United States, where the great majority of cases of infection must be attributed to the New World parasite.

The New World hookworm is known technically as *Necator americanus*, which means the "American murderer." This name was given to it because of the great number of deaths it causes, directly or indirectly. It is about one-fourth to one-half an inch long and about as thick as a small hairpin. It has hard cutting-plates or jaws guarding the entrance to its mouth, with the aid of which the parasite fastens to the intestinal wall.

WHERE THE HOOKWORM LIVES.

In its adult stage the hookworm is found fastened to the lining membrane of the small intestine. It is also sometimes found in the stomach. It makes a wound, sucks the blood, and produces a poisonous substance which injures the person infected.

A person may harbor a few hookworms, or several hundreds, or several thousands, according to the amount of infection to which he has been subjected. As children are usually subject to infection more than are adults, the disease is usually more common in them.

HOW THE HOOKWORM DEVELOPS.

These parasites do not multiply in the intestine, as their eggs require oxygen in order to develop. It is important to recall that for every hookworm found in the bowels a separate germ (young worm) must enter the body.

The parasites in the bowels lay hundreds of eggs, which are discharged by the patients in their stools. An ordinary stool from an infected person may contain thousands upon thousands of these eggs. This is an exceedingly important point to remember, for it is only through the discharges from the bowels that these eggs escape from the patients, and if all such discharges are properly disposed of hookworm disease can be stamped out of existence.

A few hours after the eggs are passed by the patient a young embryo develops in the egg and escapes from the egg-shell. This tiny worm, which

is scarcely visible to the naked eye, feeds for a few days. Within about a week it sheds its skin twice, in somewhat the same way that a snake sheds its skin. It now continues to live in the cast-off skin, but it takes no more food until it enters a person.

HOW THE HOOKWORM ENTERS HUMAN BEINGS.

The young worm may enter persons in two different ways. First, it may be swallowed in contaminated water or food. Secondly, it may bore its way through the skin. This second method of infection is doubtless the more common. The young hookworms in boring through the skin produce an attack of "ground itch" (also known as "foot itch," "footsore," "dew itch," "dew poison," etc.) Thus "*ground itch*" is usually the first stage of hookworm disease. It is quite generally believed that the wearing of shoes will prevent ground itch, and this popular belief is correct to a great extent, namely, so far as ground itch on the feet is concerned; wearing shoes will therefore *reduce* but not *eradicate* hookworm disease.

After entering the skin, these young worms make their way to the blood, and pass with the blood through the heart to the lungs. From the lungs the parasites pass up the windpipe, down the gullet, through the stomach, to the small bowels, where they gradually shed their skin two more times, become mature, and then begin their work of injuring the wall of the intestine, of sucking the blood, and of poisoning their victims.

FACTORS FAVORING HOOKWORM DISEASE.

There are certain factors which are especially favorable to the development of these parasites.

Climate.—Climate has an important influence on these worms. The hookworms which infest man require a certain amount of warmth in order to develop, and on this account they thrive better in the South than in the North. Therefore, generally speaking, this disease is a tropical and subtropical malady. In the United States it is a southern disease, and its occurrence north of Maryland is exceptional. For practical purposes, we may say that the Potomac and the Ohio rivers form about the natural northern limit of its distribution, although some few cases do occur north of these streams.

Soil.—A loose soil, such as a sandy soil, is much more favorable to the development of the worms than is a hard, compact soil, such as clay.

Moisture and Shade.—As the drying action of the sun is usually fatal to the worms when on the ground, shaded and moist localities are more favorable to the disease than are unshaded and dry localities.

SOIL POLLUTION.

It has been stated in the foregoing that the only way by which the hookworms' eggs escape from the patients is through the stools. As this is also the usual method by which the typhoid germs escape, it is seen that careless disposal of the body waste is favorable to the spread of both of these maladies. The contamination of the ground with disease germs is known as "soil pollution," and, other things being equal, hookworm disease will increase in frequency as soil pollution increases, and will decrease as soil pollution decreases.

THE EFFECTS OF HOOKWORM DISEASE.

The effects of hookworm disease may be divided into the *direct* effects and *indirect* effects.

Direct effects.—Under the direct effects of this disease we may include the symptoms and deaths due directly to the infection. Thus far I am persuaded that in reference to symptoms this infection is more severe on the white race than on the negro race, and this experience is in harmony with the observations of other workers. To put it into technical language, the negro (when compared with the white) presents a *relative immunity* to the direct effects of hookworm infection. This observation carries with it a very important thought, namely, that probably the negro race has had this disease for so many generations in Africa that it has become somewhat accustomed to it. This thought may be a very comforting one to the negro from one point of view, but from another view-point it must be decidedly disquieting to the white race, for it carries with it the thought that, on an average, in the rural districts from the Potomac to the Gulf the 833 negroes to the 1000 whites (found in eight states) represent *theoretically* 833 possible hookworm reservoirs who do not suffer so seriously from the direct effects of the malady, who are therefore not so likely to come under treatment, but who are likely to act as spreaders of the disease to the rest of the community; it also possibly indicates that the negro has brought hookworm disease with him from Africa and because of his soil pollution has spread it broadcast through the South, thereby killing thousands and causing serious disease among tens of thousands of others.

Whether this line of thought be considered justified or not, we must all frankly face the fact that the negro does have hookworm infection, and because of his insanitary habit of polluting the soil, especially in rural communities, his presence is a menace to others, not only in respect to hookworm disease, but also in respect to all other diseases spread by soil pollution.

Among the symptoms due to the direct effect of hookworm infection the following are especially prominent:

In severe infections the patients may be underdeveloped, both physically and mentally; they present an anæmia (often mistaken for malaria); the skin may be dry and tallow-like; the hair is dry; the shoulder-blades are often very prominent and the abdomen is frequently swollen ("pot-belly"); there is usually a tenderness in the pit of the stomach; in about half of the severe cases there are (or have been) ulcers on the shins; in about ninety per cent. of the cases the patients have had "ground itch" the hair in the armpits and on the pubis is frequently very scanty. Hookworm disease is the most frequent cause of "dirt-eating." It is also the most common cause of anæmia found among farm and cotton-mill hands in the South. The patients are weak, and this weakness brings with it an indisposition to work, frequently interpreted as "lazinèss."

Indirect effects.—As this infection injures the intestinal wall, brings about an intestinal catarrh, and thus interferes with the digestion, it naturally increases the chances of death in case a person is infected at the same time with some other disease in which good nourishment is important for recovery. As hookworm infection decreases the number of red blood corpuscles, it also increases the chances of death in case a person is infected at the same time with some other disease in which a good supply of oxygen

to the tissues is important for recovery. Since good nourishment and proper functioning of the blood are two of the most important factors in recovering from pulmonary tuberculosis (known commonly as consumption), it is to be expected that persons who have both tuberculosis and hookworm disease will stand less chance of recovery than will persons who have consumption but not hookworm disease. *In other words, hookworm infection has an indirect effect in increasing the death-rate from pulmonary tuberculosis.* It has been estimated that it about doubles the chances for death in cases of this disease. Now, even admitting that the direct effect of hookworm infection on the negro are less than on the white, it is a suggestive combination of facts that the tuberculosis death-rate is about three times as great in the negro as in the white (namely, 490.6 to 173.5 per 100,000).

It is evident, therefore, that the eradication of hookworm disease is of great importance to the negro in his fight against tuberculosis.

NEGRO EDUCATION AND HOOKWORM DISEASE.

Hookworm disease has a serious effect upon the mind and prevents children from fully and properly assimilating the education which the country is offering them. Hookworm children are apt to study and learn with difficulty. As I visit the country schools and pick out the children suffering from this malady, the teachers generally exclaim: "Why, Doctor, you have picked out the most stupid children in the class!" That same mental handicap which this disease places upon the white children seems also to rest upon the negro children, although, as already stated, my observations among the negroes are much less extensive than among the whites.

The point to be made is this: Because of the effects which this infection has upon the mind, the present soil pollution (which spreads the disease) so prevalent among the negroes is necessarily resulting in a severe handicap in the mental advancement of the negro children.

As nearly as can be estimated (admittedly a rough estimate) the physical condition of the southern country school children with whom I come in contact is such that they can not possibly assimilate much over 70 per cent. of the education they receive; in other words, somewhere about 30 per cent. of the educational efforts are wasted, and prominent southern educators have stated that this estimate is very conservative. It may be stated that many of the country schools and country churches are breeding-places for disease, and whatever they may do for education and religion *they are in their present insanitary condition a menace to public health*; a large number of the country schoolhouses and country churches are not provided with any privy, and children congregating at the schools by polluting the soil may spread disease to one another.

TREATMENT OF HOOKWORM DISEASE.

Treatment of this malady should be conducted under the personal direction of a physician, as the size of the dose of thymol to be given depends upon the physical condition of the patient. Every person who has the infection, even if it is so light that he does not feel serious or any effects, owes it to his fellow-men to undergo treatment. The treatment is not expensive, and it can be carried out without losing time from work.

PREVENTION OF HOOKWORM DISEASE.

All persons, whether infected or not, but living in the infected area, can aid in preventing this malady. *The most important point involved is to prevent soil pollution.* As stated in the foregoing, because of the absence of privies many farms, schools and churches are acting as a medium for soil pollution, resulting in hookworm disease and certain other maladies.

The average privy found in the South is known as a "surface" or "dirt" privy, and is a very poor substitute for a water-closet, as it permits soil pollution.

Whatever style of closet is selected or whatever fluid is used, the chief points to be held in mind are: Prevent soil pollution; so protect the night soil that flies and other insects cannot breed in it or feed upon it; and keep it out of the reach of animals of all kinds.

It lies within the power of preachers and teachers to play a very important role in reducing the death-rate. They are the persons to whom many people look to set the example. If preachers and teachers themselves permit the yards of churches and schools to be defiled by soil pollution it need not be thought strange if farmers permit soil pollution to occur around the homes. Further, it should be recalled that every church and every school around which soil pollution is permitted to occur may act as a disease-breeding center from which infection can be spread to the farms and homes. Further, also, not only can preachers and teachers do good by setting an example in preventing soil pollution, but if they will point out to their friends the dangers which this pernicious habit carries with it they can be very important factors in inducing the public to institute more sanitary customs, and thereby they can be important factors in reducing the death-rate.

The Kansas Tuberculosis Exhibit.

On August 23 the tuberculosis exhibit of the State Board of Health was first opened to the public at Holton.

The Board and the public in general are to be congratulated in securing the services of Dr. S. C. Emley as lecturer and field manager of the exhibit. Doctor Emley holds the position of professor of pathology in the University School of Medicine at Lawrence and is particularly well fitted for the work of a two-years educational campaign along the lines of preventable diseases, especially tuberculosis, which has been inaugurated by the State Board of Health. Two assistants accompany Doctor Emley—one a trained nurse of large experience, who, it is designed, shall visit tubercular cases, with the knowledge and consent of the attending physician, to instruct such cases and the householder as to the proper use of the prophylactic supplies furnished by the department of health and give such other instructions as may safeguard the patient, patient's family and immediate community.

The instructions given at the exhibit are largely to those who are uninfected—to the well; the instructions given by the visiting nurse are mainly to those who are infected—the sick; and thus it is thought that the entire field might be properly covered. The other assistant acts in the capacity of an advance agent, to have charge of the advertising and arrangements for the exhibition.

The itinerary for the months of August and September is as follows: Holton, August 23, 24 and 25; Horton, August 26, 27 and 28; Troy, August 30 and 31; Atchison, September 1 to 4, inclusive; Valley Falls, September 7 and 8; Oskaloosa, September 10 and 11; Leavenworth, September 14 to 18, inclusive; Tonganoxie, September 20 and 21; Seneca, September 23, 24 and 25; Hiawatha, September 28, 29 and 30.

How to Restore the Apparently Drowned.

The following is the method of resuscitating the apparently drowned recently advocated by Professor Schaefer, of Edinburgh. It is stated that this method has been adopted by the Royal Humane Society of England, the Royal Life Saving Society, and the Coast Guard Service. It will be noted that the patient is kept face downward throughout the operation:

The individual whom it is desired to resuscitate is promptly, and without a moment's delay in either loosening clothing, drying, warming, or shaking the water out of the lungs, turned upon his stomach upon the shore, or other level place, the face being turned to one side so that the nose and mouth are clear of the ground. Then the operator kneels, either by the side of or astride the patient's hips, facing toward his head, places both outspread hands upon the small of the back, just over the shortest ribs, and pitches his body and shoulder forward so as to bring the whole weight heavily upon the body of the victim. This downward pressure should take about three seconds. He then swings upward, lifting his hands off suddenly and quickly. The elasticity of the ribs and of the contents of the abdomen cause the chest to expand. In three seconds more the process is repeated, and so on, indefinitely, making ten or twelve of these movements per minute. The position allows the tongue to fall forward, and any mucous or water which may be present in the lungs to readily escape through the mouth. By simply swinging backward and forward, throwing the weight of his body upon the waist-line of the victim, any operator of moderate

intelligence and of most moderate strength, even a delicate woman or a child, can gain a sufficient inflow of air—flowing in and out through the lungs of the patient—to supply him with as much air as would be taken in if he were able to breathe voluntarily. Promptness in beginning the pumping operation is imperative.

The Schoolroom as a Factor in Tuberculosis.

From the Transactions of the International Congress of School Hygiene, London, 1907.

Tuberculosis is undoubtedly prevalent among school-teachers. In Canada, in 1881 and 1883, an analysis of the returns showed that teaching was one of the occupations most frequently attacked. Late figures from the United States census are significant.

The ratio of deaths from consumption in 1000 deaths was:

Of all males engaged in all occupations.....	154
Of all male teachers.....	184
Of all females engaged in all occupations.....	215
Of all female teachers.....	256

The causes are to be found in foul air and possibly chalk-dust. The remedy is obvious.

Tuberculosis Notes.

The common-drinking cup must go.

Doctor Shannon, of Edinburgh, recently stated that out of the 1000 city children under three years of age examined by him 647 had tuberculosis in some form.

There are constantly 3,000,000 persons seriously ill in the United States, of whom more than 600,000 are consumptives. More than half of this illness is preventable.

Owing to their studious habits and their lack of proper physical exercise Chinese students, both in this country and in their native land, are especially liable to tuberculosis.

That tuberculosis is no respecter of persons is evidenced by the recent death of the two boy princes of Montenegro from that disease, which they contracted from a maid in their nursery.

In England, in addition to other efforts to combat tuberculosis, a unique project is being placed on foot, to put into commission a sailing ship sanatorium for persons suffering with tuberculosis.

That consumption can be permanently cured is demonstrated by some figures published by Dr. A. Van Breden, of Belgium, who says that 75.8 per cent. of the patients treated in the Bourgoumont Sanatorium in 1903-'04 have continued, four years after treatment, to improve, and are in a condition to return to their regular occupations.

Dr. Wilfred T. Grenfel, the famous Labrador explorer and social worker, says that in the interests of the campaign against tuberculosis he has induced most of the natives to weave the motto "Don't Spit" in their rugs, instead of other homely sayings which were formerly used.

It was stated by Dr. William C. White, of Pittsburg, at the recent meeting of the National Association for the Study and Prevention of Tuberculosis, that 90 per cent. of all the school children in our large cities have tubercle bacilli in their system before reaching the age of nineteen years.

REAL COURAGE.

COURAGE has many forms and aliases and comes upon the scene of action disguised in many ways. We turn for a moment from the thrilling exploits of the gentleman who, after carefully equipping his machine with gas-bags so that it could not sink and making arrangements for a torpedo boat to follow closely, soared last week across the English Channel, to more humdrum things at home. We have in mind especially the feat of Sergeant Fuller and Privates Goodman and Schmidt, of Fort Omaha.

The feat turned upon the desirability of procuring an anti-toxin for the treatment of typhoid. Fuller, Goodman and Schmidt voluntarily gave themselves up to the test. They were vaccinated with typhoid serum and developed the disease in mild form. Later, they were again vaccinated but the serum did not take. Atop of that they ten days ago underwent the supreme test, that of drinking freely of a gallon of stagnant water in which one million typhoid fever germs had been placed. They should have developed symptoms in from five to seven days, but as none have appeared they are now declared immune.

There was no wildly applauding crowd when Fuller, Goodman and Schmidt drank freely of stagnant water strongly inoculated with fever germs. There were no top heads in the newspapers next day. There was for them no pot of gold at the end of the rainbow. And yet the obligation which humanity incurred was much greater than the debt it owes to Bleriot. The service which Fuller, Goodman and Schmidt performed was much the greater of the two, and it required a higher form of courage. Let us turn oftener to the humdrum things at home. Let us not forget the feat of Fuller, Goodman and Schmidt. That was real courage.

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No. 9.

SEPTEMBER, 1909.

VOL. V.

The polluted water of a well cannot be purified by painting the pump.

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CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	11	0	0	0	10	0	0	0	0	0
Miami	8	1	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	8	0	0	0	7	0	0	0	0	0
Montgomery	8	8	11	1	0	0	0	0	0	0	1	0
* Morris												
* Morton												
Nemaha	0	0	2	2	0	0	0	0	0	0	0	0
Neosho	2	1	1	0	1	0	0	0	0	0	0	0
Ness	1	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	2	0	0	0	0	0	0	0	0	0
Osage	1	2	7	1	2	2	0	0	0	0	0	0
Osborne	1	0	4	0	0	0	0	0	0	0	0	0
Ottawa	2	0	0	0	0	0	0	0	0	0	0	0
Pawnee	0	0	4	1	0	0	0	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
* Pottawatomie												
Pratt	0	0	1	0	0	0	1	0	0	0	0	0
Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Reno	4	1	18	0	0	0	0	0	0	0	0	0
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	0	0	8	0	4	0	0	0	0	0	0	0
Riley	2	0	8	0	0	0	0	0	0	0	0	0
Rooks	1	1	6	1	0	0	0	0	0	0	0	0
Rush	2	1	1	0	0	0	0	0	0	0	0	0
Russell	0	0	0	0	0	0	0	0	0	0	0	0
Saline	2	0	1	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	1	1	1	0	0	0
Sedgwick	8	1	8	1	0	0	0	0	0	0	0	0
Seward	1	0	0	0	0	0	0	0	0	0	0	0
Shawnee	0	0	2	0	0	0	0	0	1	0	0	0
Sheridan	0	0	8	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	0	0	1	1	0	0	1	1	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
* Stevens												
Sumner	0	0	10	8	0	0	1	1	0	0	1	0
Thomas	0	0	6	0	0	0	0	0	0	0	0	0
* Trego												
Wabaunsee	0	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	1	0	0	0	0	0	0	0	0	0
Washington	0	0	5	1	0	0	2	0	0	0	0	0
Wichita	0	0	0	0	1	0	0	0	0	0	0	0
* Wilson												
Woodson	1	1	8	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	1	0	0	0	0	0	0	0
Cities:												
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Coffeyville	2	1	2	1	0	0	0	0	0	0	0	0
Fort Scott	2	2	8	0	0	0	0	0	0	0	1	0
Kansas City	4	8	24	11	19	0	8	0	0	0	0	0
Leavenworth	7	4	2	0	1	0	0	0	0	0	1	0
Parsons	1	0	8	8	0	0	0	0	0	0	0	0
Pittsburg	0	0	12	5	2	0	0	0	0	0	0	0
Topeka	0	0	7	5	1	0	5	0	0	0	0	0
Wichita	6	4	25	9	8	2	1	0	0	0	2	0
State Institutions.	188	4	1	0	0	0	0	0	0	0	0	0

* No report.

Scat !

The common drinking-cup has gone !

Consumption is a common disease among plants and flowers, being most frequent in house plants.

FOOD ANALYSIS No. XXIV.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for State Board of Health, and
Prof. H. L. JACKSON, B. S., Food Analyst.

ADDITIONAL DATA TO ILLEGAL SYRUPS LISTED IN TABLE.

No. 7242. Label, Maple Wood Brand Fancy Table Syrup, Maple Flavor, the Highest Grade of Syrup Refined, Granulated and Maple Sugar will make. Guaranteed under the National Pure Food and Drug Act, June 30, 1906. Manufacturer, Dodson-Braum Manufacturing Company, St. Louis, Mo.; retailer, J. W. Swisher, Fort Scott. This syrup is misbranded on account of its claim as per label above.

No. 7245. Label, Bonne Molasses. This Molasses is Unexcelled for Fancy Cooking, and guaranteed pure. Manufacturer, Bliss Syrup Refining Company, Kansas City; retailer, J. W. Withers, Fort Scott. Purchased September 29, 1909. The ash is above the legal limit for molasses. This product has the appearance of a second molasses, and is misbranded by the claims of the label. Illegal.

No. 7271. Label, Blood of The Maple Sap Syrup. A Delicious Pure Product of the Rock Maple Tree. Serial No. 4842. This is listed as doubtful on account of its very low alkalinity of the insoluble ash and 3 per cent. excess of water over legal limit. The ash is also brown in color.

No. 7274. Label, 5 lbs. Net Weight, 100 per cent. Pure Molasses. Serial No. 8563. Manufacturer, St. Louis Syrup and Preserving Company, St. Louis, Mo.; retailer, H. Garland, Fredonia. Purchased October 2, 1908. Ash above the 5 per cent. limit for molasses. It has the general characteristics of a second molasses, and cannot be considered "100 per cent. molasses." Misbranded. Illegal.

No. 7276. Label, Silver Seal Table Syrup. A Blend of Maple and Cane Syrups. Manufacturers, Boyle & Williams, Bradford, Pa.; retailer, J. Salathiel, Independence. Purchased October 6, 1908. Contains much more cane-sugar syrup than maple syrup and is misbranded. Illegal.

No. 7277. Label, St. Julian Plantation New Orleans Centrifugal Molasses, Prime Quality. Manufacturer, Manierre-Yoe Syrup Company, Chicago; retailer, J. Salathiel, Independence. The flavor is strong and disagreeable and like that of second molasses. It is misbranded by its claim of "New Orleans Molasses, Prime Quality," which appears conspicuously on the label. Illegal.

TABLE SYRUPS AND MOLASSES.

① No. 7302 is a mixture of invert sugar and honey, and labeled "Sugar and Honey."

No. 7306. Label, Quarter Gallon Richelieu Brand, Open Kettle Molasses. Contains Sulfur Dioxide. Manufacturers, Sprague-Warner & Co., Chicago; retailer, M. Courtney, Wichita. Purchased October 26, 1908. The low purity, high ash and high alkalinity of ash confirm its appearance as a second molasses. It has been bleached by sulfur dioxide to resemble open-kettle molasses, but its flavor is rank and like that of a second molasses. Misbranded by its label, and illegal.

No. 7333. Label, A. P. Brand Cane and Refiners' Syrup, with Maple Flavor. Serial No. 873. Manufacturer, Bliss Syrup Refining Company, Kansas City, Mo.; retailer, Wichita Wholesale Grocery Company, Wichita. Misbranded by the words "Absolutely Pure," as the "Refiners" syrup itself contains the accumulated impurities obtained in refining sugar.

No. 7370A. Label, Vermont's Finest Quality Pure Maple Sap Syrup. Serial No. 8708. Manufacturers, Welch Bros. Maple

Company, Burlington, Vt.; retailer, Frank Meierhoffer, Lawrence. Purchased November 20, 1908. Low ash indicates adulteration. Illegal.

No. 7471. Label, Old Orchard Brand. Compound Maple and Granulated Sugar Syrup. 35% Maple Sugar 65% Granulated Sugar. Manufacturer, St. Louis Syrup and Preserving Company, St. Louis, Mo. Retailer, L. B. Hosick, Yates Center. Misbranded, as the word maple appears first, while the chief constituent is granulated sugar.

No. 7579. Label, Acme Brand Syrup, with Maple Flavor. A Syrup that Satisfies All. Serial No. 873. Manufacturer, Bliss Syrup and Refining Company, Kansas City, Mo.; retailer, King Bros., Larned. Purchased August 10, 1909. Flavor and odor of brown sugar. Maple flavor absent. The analysis also shows maple syrup to be absent and the brown sugar present. The flavor is brown sugar and not maple. Illegal.

No. 7581. Label, Ko-Ka-Ma. A Delicious Maple Flavored Syrup. 70% Corn Syrup, 15% Cane Syrup, 15% Maple Syrup. Serial No. 129. Manufacturer, Manierre-Yoe Syrup Company, Chicago; retailer, M. A. W. Jordon, Larned. Purchased August 10, 1909. Flavor of glucose and sugar. Analysis shows maple syrup absent. Misbranded, as there is no maple flavor to be detected, and the words "Maple Flavor" are very conspicuous. Illegal.

No. 7559. Label, Plantation Brand Corn Syrup, Sorghum Substitute, 85% Corn Syrup, 15% Molasses. Manufacturer, Manierre-Yoe Syrup Company, Chicago; retailer, M. K. Meador, Coolidge. Misbranded by the word "Sorghum," as there is no sorghum in it.

VINEGAR.

Number	Acid	Solids	Ash	Alkalinity of soluble ash ..	Remarks.
3A	3.78	2.68	0.20	19.96	Illegal.
3B	3.78	2.58	.21	19.88	..
12B	4.11	2.56	.18	16.16	..
2066	4.76	1.81	.29	28.85	Passed.*
3297	5.20	3.15	.41	14.95	Glucose vinegar, passed.
5319	4.16	1.53	.30	38.50	Illegal.
5322	6.50	1.92	.24	27.00	..
7535	4.70	.....	.....	.....	Distilled vinegar, passed.
7552	4.51	2.69	.53	27.90	Illegal.
9020	4.02	1.96	.29	29.05	Passed.
9021	8.22	.52	.07	5.60	Passed.
9023	3.19	.22	.04	.....	Illegal.
9026	3.66	1.28	.21	22.65	..
9027	2.89	.62	.18	22.45	..

* No. 2066. Although the ash solids of alkalinity are low, the malic acid (P_2O_5) and per cent. of solids were normal and the vinegar is passed.

ADDITIONAL DATA TO THE ILLEGAL VINEGARS LISTED ABOVE.

No. 3A. Label, Pure Cider Vinegar, Otto Kuehne Preserving Company, Topeka; retailer, Dibble Grocery Company, Topeka. Purchased June 22, 1909. Brand, Silver Leaf Pure Cider Vinegar. "Guaranteed under the Pure Food Law." See analysis. Illegal.

No. 3B. Label, Silver Leaf Pure Cider Vinegar. Manufacturer, Otto Kuehne Preserving Company, Topeka; retailer, Dibble Grocery Company, Topeka. See analysis. Illegal.

No. 12B. Label, Cider Vinegar. Manufacturer, Otto Kuehne Preserving Company, Topeka; retailer, Dibble Grocery Company, Topeka. Purchased May 17, 1909. See analysis. Illegal.

No. 5319. Label, Vinegar. Manufacturer, Hutchinson Vinegar Company. Purchased December 16, 1908. See analysis. Illegal.

No. 7552. Inspector reports that he could not read the label on the barrel but that the retailer states it is Emrick's Cider Vinegar; retailer, John Riggs, Kansas City, Kan. Purchased July 8, 1909. See analysis, which shows it to be adulterated and illegal.

No. 9021. Label, Silver Leaf Vinegar. Manufacturer, Monarch Vinegar Works, Kansas City; retailer, J. N. Carver, Oakley. Purchased September 2, 1909. The retailer is said to have a verbal order to reduce this vinegar one-half with water. Illegal.

No. 9023. Label, Silver Leaf Vinegar. Manufacturer, Monarch Vinegar Works, Kansas City; retailer, George T. Brown, Gore. Purchased August 3, 1909. Inspector reports jobber's instructions are to reduce the strength by adding water. Illegal.

No. 9026. Label, Vinegar. Manufacturer, R. L. Hobbs, Winona; retailer, P. S. Curtenius, Winona. Purchased May 9, 1909. The analysis shows it is not a cider vinegar as its label would indicate. It was being sold from a barrel branded "Silver Leaf Distilled Vinegar, Otto Kuehne Preserving Company, Topeka." Illegal.

No. 9027. Label, Cider Vinegar. Manufacturer, S. A. Kistler, Colby; retailer, A. C. Ward, Page City. Purchased August 5, 1909. This was purchased of Mr. Kistler for cider vinegar. The analysis shows it is adulterated. Illegal.

PICKLES.

No. 7516A. Label, Chow Chow. Examined for Alum. None found. Passed.

No. 7547. Label, Bulk Pickles. Manufacturer, Otto Kuehne, Topeka, Kan.; retailer, Brum Maguire Meat Market, Fort Scott. Purchased July 2, 1909. Brand, "Silver Leaf Sweet Gherkins." Alum not stated on label. Illegal.

No. 7549. Sweet Pickles. Examined for alum, copper, zinc, salicylic and benzoic acids and saccharin. None found. Passed.

No. 7550. Sour Pickles. Examined for alum, salicylic and benzoic acids and saccharin. None found. Passed.

LEMON EXTRACT.

No. 2021. Label, Soluble Concentrated Extract of Lemon. Manufacturer, Sharpe & Dohne, Baltimore; retailer, C. H. Hays, Goff. Purchased April 21, 1909. Contains no oil of lemon and is colored yellow with coal-tar dye. Illegal.

No. 7539. Label, Genuine Flavor of Lemon. Manufacturer, Ottawa Wholesale Grocery Company, Ottawa, Kan.; retailer, J. O. Jaggar, Vernon. Purchased May 26, 1909. Billed on the invoice of April 22, 1909, as "Lemon Extract." No oil of lemon. Illegal.

EXTRACT OF MAPLE.

No. 7555. Label, Extract of Maple. Manufacturer, H. P. Syfan, Kansas City, Kan.; retailer, same. Purchased July 15, 1909. This sample was a very dark brown, rank flavor, rather thick liquid, having the following analysis:

Ash, per cent. by weight.....	0.64
Ash insoluble, per cent. by weight.....	.12
Ash soluble, per cent. by weight.....	.52
Alkalinity of soluble ash, C.C. N/10 acid per 1g. substance,	.19
Alkalinity of insoluble ash, C.C. N/10 acid per 1g. substance,	.15

The above analysis shows that this substance is not entitled to the name "Extract of Maple." Furthermore, it has neither the flavor nor the odor of maple syrup, and when used in such a proportion with granulated sugar syrup to give the color of maple syrup, the product resulting has neither the flavor nor the odor of a maple syrup but has a rather rank taste. This product would serve merely to color the granulated sugar syrup, and its sale and use under the name of "Extract of Maple" is clearly illegal.

SALT.

No. 3685. Sent in with the complaint that it seemed to scour cattle. Examined for magnesium sulfate. None found. On the other hand, this was found to be a pure commercial common salt. Passed.

SAUSAGE, MINCED.

No. 8010. Examined for sulfites. None found. Passed.

SUGAR.

No. 7556 is a cake of brown-colored sugar resembling in appear-

ance a brick of maple sugar, but upon examination has the following:

Sucrose	99.10	per cent.
Water.....	6.00	"
Ash.....	.03	"

Which shows it to be merely pure cane sugar colored with a small quantity of No. 7555, reported above under the heading of "Extract of Maple." This shows clearly what the extract of maple is designed to accomplish. The brown-colored sample is caused to resemble maple sugar in general appearance, but has neither the flavor nor the odor of maple sugar. However, when given to several persons who are not familiar with maple sugar, it deceived them and they believed they were getting a rather poor quality of maple sugar. This product is of course illegal.

CANNING COMPOUND.

No. 5324. Label, "Mrs. Price's Canning Compound. Manufactured by the Price Compound Company, Minneapolis, Minn. May be used in canning all kinds of fruits, and is especially valuable for Corn, Beans, Peas, Asparagus, Tomatoes, etc. May be used in making Catsup, Sweet Pickles, or anything that is liable to ferment. It saves money, time, labor, worry, and insures the best results. See book of directions for instruction in using the compound and how to do all kinds of canning.

"Book with free samples sent to any address on application. The contents of this package is sufficient for four quarts."

On the reverse side of this package, which is an envelope, is found:

"Notice to Purchasers.

"It is not claimed for this compound that it contains anything of food value, but it is an antiseptic preparation, and among its many uses may be employed to prevent canned fruits and vegetables from souring and spoiling.

"Read This Also.

"We have explained in our Receipt Booklet how dangers from metal-top cans may be overcome, but we find our own glass-top cans, such as Lightning and Globe, are not closing as tightly as they did when new, owing to the wire bail giving, and supposing others may meet with the same difficulty, we suggest you make a thick fold of paper and place on top the cover and then spring the lever down, thus making the can perfectly tight; also, do not use those cheap, hard, can rubbers, but buy the best, and do not use them when they are not as good as new. Retail price, one package ten cents."

This package contains thirty grams, or about one ounce, of com-

mercial boric or boracic acid. Since the contents of the package are claimed to be sufficient for four quarts of canned goods, there would be about eight grams to each can of vegetables or fruits. Assuming eight persons are served from one can, each person would receive one gram of this chemical preservative at one meal. Since it is advised that the same preservative be used for vegetables, catsups, sweet pickles, or anything that is liable to ferment it might easily happen that besides canned vegetables, catsups and sweet pickles or canned fruits containing this preservative might be eaten at the same meal which could easily increase the amount of boracic acid received by one person at a single meal to two or three grams of the preservative—a quantity which Doctor Wiley, of the United States Department of Agriculture has shown to be very detrimental, and people receiving such amounts showed numerous signs of derangement of the digestive tract. For a child to receive such an amount of the preservative might be very serious. Such substance being sold for use in a household where its nature is not known nor understood cannot be too severely condemned. The appearance of a serial number and guarantee on such a product should be prohibited.

DRUG ANALYSIS No. XXII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The twenty-second report of drug analysis, and of investigation, is herewith submitted. It was suggested, through the office of the State Board of Health, that the laboratory should investigate the keeping qualities of tincture of iodine in cork-stoppered bottles. Such variation in iodine strength as was found to exist in the preparations of the market, it was suggested, might be caused by the collection of samples in cork-stoppered bottles, which might lead to deterioration or loss of iodine before the sample was examined. To determine the facts concerning the alleged cause of deterioration, a series of experiments were carried on in the laboratory. One hundred and thirty samples of various tinctures of iodine, which had been collected and carefully analyzed, were set aside in cork-stoppered bottles for a period of nine months, and each sample again analyzed.

It is not necessary to burden the report with figures, but the final result may be stated. Examination of tinctures of iodine thus stored in cork-stoppered bottles point to the rather unsuspected result that if the official tincture (containing potassium iodide) be

thus kept there is very little change, but the change, if any, is due to a loss of alcohol and consequently a concentration of the iodine. If, on the other hand, the tincture contain no potassium iodide (unofficial) the concentration of iodine is more marked. The latter tincture always attacks the cork. So marked is this corrosive action that one can tell at once whether the sample is of the official variety or not. If the cork is badly attacked the sample contains no potassium iodide. If it is not attacked, or but slightly affected, it is the official variety. That the official tincture tends to increase in iodine strength rather than decrease is shown by Mr. Adolph Ziefle's experiments, which are herewith submitted.

KEEPING QUALITIES OF TINCTURE OF IODINE.

Samples were prepared of a tincture of iodine, which were stored under different conditions. The first samples were prepared on September 7, 1908, and the tincture assayed when 5 cc. required 26.02 cc. of sodium hyposulphite $N/_{10}$ volumetric solution to decolorize.

- No. 1. A 1-oz. plain bottle with plain cork.
- No. 1A. A 2-oz. bottle with plain cork.
- No. 2. Iodine in glass-stoppered bottle.
- No. 3. Iodine in rubber-stoppered bottle.
- No. 4. Iodine in glass-stoppered bottle in which a piece of cork was suspended.
- No. 5. A large plain cork and common bottle.
- No. 6. A paraffined cork-stoppered bottle.

These samples were assayed again on January 30, 1909.

No. 1.	Assayed	26.65 cc.	$N/_{10}$	$Na_2S_2O_3$.
No. 1A.	"	26.35	"	"
No. 2.	"	26.6	"	"
No. 3.	"	26.55	"	"
No. 4.	"	25.9	"	"
No. 5.	"	26.55	"	"
No. 6.	"	26.4	"	"

The corks were all in very good condition. There had been but very little action. The cork in No. 4 showed that there had been but very little action, although the iodine had impregnated it thoroughly.

Another analysis of these preparations was made on February 30, 1909.

No. 1.	Assayed	26.15 cc.	$N/_{10}$	$Na_2S_2O_3$.
No. 1A.	"	26.45	"	"
No. 2.	"	26.7	"	"
No. 3.	"	26.85	"	"
No. 4.	"	26.6	"	"
No. 5.	"	26.8	"	"
No. 6.	"	26.3	"	"

The corks in these were very slightly affected. These samples were assayed again on March 10, 1909:

No. 1.	Assayed	26.70 cc.	N/10	Na ₂ S ₂ O ₃ .
No. 1A.	"	26.7	"	"
No. 2.	"	26.8	"	"
No. 3.	"	26.8	"	"
No. 4.	"	25.8	"	"
No. 5.	"	26.8	"	"
No. 6.	"	26.5	"	"

From the above results it can be seen that iodine, when stored in a cork-stoppered bottle, really concentrates instead of weakens, even if the amount of space given by the cork does not exceed that in any ordinary bottle. This concentration is undoubtedly due to the evaporation of alcohol and a retention of iodine.

Mr. Ziefle concludes his report by stating: "I am convinced that tincture of iodine can be safely stored in cork-stoppered bottles for a reasonable length of time without loss of iodine and with little or no deterioration." Mr. Ziefle's work has been confirmed by another trained student in this work, Mrs. Agnes Dunning.

The cause of the variation in samples of tincture of iodine must be due to one of two causes. If the sample is weak in iodine it has been improperly made or an inferior iodine has been employed. The Pharmacopœia particularly warns against two possible adulterations: (1) Moisture, (2) iodine cyanide (ICn). Cyanogen compounds originate from the combustion of carbon and nitrogenous compounds in the presence of the alkali formed from organic salts during the combustion or distillation of the seaweed from which the iodine is made.

Permit me to refer in this report to questions which have come to the laboratory concerning our use of the term "beverage" in reporting on certain alcoholic liquid "tonics." The United States Internal Revenue Bureau has made certain rulings which define a medicinal liquid, and has made the following statement:

"This office holds that in a genuine medicine the alcohol should not be more than is necessary for the legitimate purposes of extraction, solution or preservation, and that the preparation should contain approximately a U. S. P. dose of some medicinal ingredient of recognized value, either alone or in combination with other compatible drugs, etc."

In the August issue of the *Druggists' Circular* (p. 421) this ruling is referred to under the caption "Differentiating Between a Medicine and a Beverage."

It should be said that the above ruling is from the point of view of the Internal Revenue Department, and would not be appli-

cable for distinguishing medicine from beverage in Kansas, at least as a guide to drug analysts, since if it were accepted it would appear that certain accepted and recognized official elixirs—some of which are used simply as flavoring agents or adjuvants—could not be sold under the Kansas laws. Therefore, it seems desirable that some ruling concerning preparations of this sort be made by the Kansas Board of Health with a view to distinguishing between these legitimate medicinal preparations and certain others, weak in medicinal strength, which are now being placed on the market, doubtless with a view and an honest effort to introduce medication in an agreeable form.

The following substances have been recently examined:

Lab. No. 2696, Insp. No. 1668. Label, Adora Hair Dressing. Manufactured by J. C. Smith Barber Supply Company, Leavenworth, Kan.; W. E. Stewart, Topeka, retailer. Alcohol not declared by manufacturers. Found to be largely wood alcohol and volatile oil.

Lab. No. 2698, Insp. No. 1670. Label, Dick's Quinine Hair Tonic. Manufactured by the Topeka Barber Supply Company, Topeka. Alcohol declared by manufacturers, not over 40 per cent. Preparation was found to contain some glycerine and about 40.5 per cent. alcohol. No quinine was detected.

Lab. No. 2827, Insp. No. 1804. Label, Po. Nux Vomica. F. A. Slaymaker, Peabody. Found to be microscopically O. K., and to contain 1.26 per cent. strychnine. Passed.

Lab. No. 2855, Insp. No. 1833. Label, Dr. Harter's Compound Wild Cherry Bitters. Alcohol declared by manufacturer, 32 per cent. Found to contain 32.7 per cent. alcohol. Residue from 100 cc. is about 0.7 gm., which is a little more than the maximum for whisky. Flavored with wintergreen. Dose, one tablespoonful before each meal.

Lab. No. 2854, Insp. No. 1832. Label, Capo Oil. Manufactured by the King's Medical Company, New York; Southwestern Drug Company, Wichita, retailers. "Capo Oil" is guaranteed to grow hair on bald heads; to destroy the microbes of baldness; to restore hair to its natural growth and color; to eradicate dandruff; to be cooling and healing, and to soften and invigorate the hair. The literature on Capo Oil is evidently intended to lead the reader to believe that Capo Oil is distilled from the capillaries of the necks of horses and buffalo heads. Part of the trade-mark is the picture of a buffalo head, printed in red, registered June 15, 1897. Alcohol declared by the manufacturer, 25 per cent. This declaration ap-

pears on the wrapper, but not on the bottle. Capo Oil is a yellow liquid, containing quinine, wood alcohol and glycerine.

Lab. No. 2853, Insp. No. 1831. Label, Van's Mexican Hair Restorer. Manufactured by Dwight T. Sprague & Co., Chicago; Southwestern Drug Company, Wichita, retailers. Alcohol declared by manufacturer, 0.008 per cent. Declared to restore gray hair, whiskers, mustache and eyebrows to original color; that it is a hair food; that it does not dye the hair; that it kills the dandruff germ; that it stops hair falling out, and that it cools the head and brain. Warranted absolutely free from *lead* or anything injurious. Found to contain a salt of lead. Misbranded.

Lab. No. 2852, Insp. No. 1830. Label, Cranitonic, Scalp and Hair Food. Declared by manufacturer to destroy the microbes of dandruff and baldness, to stop falling hair, to allay all scalp irritation, to make the hair grow and render it soft and lustrous, to be absolutely harmless, and to contain no dye matter or dangerous drugs. The per cent. of alcohol is not declared by manufacturer. Cranitonic was found to contain borax or boric acid and wood alcohol.

Lab. No. 2860, Insp. No. 1842. Label, Danderine. Manufactured by the Knowlton Danderine Company, Chicago, Ill.; C. E. Potts Drug Company, Wichita, retailers. Sample too small for analysis.

Lab. No. 2861, Insp. No. 1843. Label, Prof. Alexis C. Barry's Tricopherous or Medicated Compound. Alcohol declared by manufacturer, 81 per cent. Declared by manufacturer to cure all diseases of the skin and hair. Found to contain alcohol, coloring matter and a fixed oil.

Lab. No. 2880, Insp. No. 1862. Label, Worthmore's Whisky. R. G. Shipman, manufacturer, fifth district, New York, No. 368; O. E. Paullin Drug Company, retailers. Declared 100 proof. Alcohol found, 54 per cent.; specific gravity, 0.934. Residue from 100 cc., 0.2 gram. Passed.

Lab. No. 2882, Insp. No. 1864. Label, Whisky. Fox Drug Company, Wichita. Found to contain alcohol, 53.3 per cent. Has specific gravity of 0.930. Residue from 100 cc., 0.33 gram. Passed.

Lab. No. 3070, Insp. No. 2050. Label, Po. Rhubarb. C. O. Gwyn & Co., Onaga. Passed.

Lab. No. 3182, Insp. No. 2103. Label, Spirit of Camphor. Rose & Gordon, Kansas City. Alcohol declared by manufacturer, 86 per cent. Found to contain 4.6 grams camphor in 100 cc. and 31.3 per cent. added water.

Lab. No. 3191, Insp. No. 2107. Label, Spirit of Camphor. Chas. Faucett, Kansas City. Found to contain 12.3 grams camphor in 100 cc.

Lab. No. 3193, Insp. No. 2109. Label, Spirit of Camphor. W. A. Ackenhauser, Kansas City. Found to contain 9.7 grams of camphor in 100 cc. of tincture. Passed.

Lab. No. 3195, Insp. No. 2111. Label, Essence of Peppermint. Callery's Pharmacy, Kansas City. Sample contains 9.7 cc. of oil in 100 cc. of tincture. Passed.

TINCTURE OF IODINE.

Tincture of iodine should show by assay about 6.86 grams of iodine in each 100 cc. of tincture, and should contain about 5 grams of potassium iodide in each 100 cc. of tincture.

Lab. No.	Insp. No.	NAME.	City.	Grams of iodine in each 100 cc. of tincture.	Potassium iodide.
3174	2090	Viaduct Pharmacy.....	Kansas City.....	5.4	Present.
3175	2091	Harrison Drug Company.....	"	4.1	"
3176	2092	The Flag Pharmacy.....	"	7.1	"
3177	2093	L. K. Miles.....	"	6.6	"
3178	2094	Brown Drug Company.....	"	7.3	"
3179	2095	Medearis Drug Company.....	"	2.6	"
3180	2096	Frank M. Robb.....	"	3.9	"
3181	2097	J. W. Giesburg.....	"	6.1	"
3182	2098	Tom Lilley's Drug Store.....	"	7.1	"
3183	2099	E. R. Cartmell's Drug Store.....	"	5.9	"
3184	2100	H. E. Dengel.....	"	2.1	"
3185	2101	H. C. Kandt.....	"	7.7	"
3186	2102	Lilley.....	"	7.1	"
3188	2104	Grandview Drug Company.....	"	7.3	"
3189	2105	Armourdale Drug Store.....	"	17.5	"
3190	2106	Lee Vaughn.....	"	6.7	"
3192	2108	Keefer's Pharmacy.....	"	5.5	Absent.
3194	2110	Chelsea Cash Drug Company.....	"	6.5	"
3196	2112	R. A. Hassig.....	"	6.9	"

Acute Anterior Poliomyelitis.

A wide-spread epidemic of anterior poliomyelitis has appeared in Norton and Decatur counties, in the northwestern part of this state. While there have been sporadic cases of this disease in various parts of the state in times past, yet this we believe to be the first instance of an epidemic of this character. There have been in the neighborhood of fifty cases thus far, although we are glad to report that the epidemic is about at an end, there having been no new cases reported since September 16.

Physicians over the state are requested to report to this department every case that may have occurred in their practice during the past few months, giving the name, location, progress and history of the disease.

A painstaking investigation is being made as to the cause and progress of the epidemic, results of which will be tabulated and published in the BULLETIN at an early date.

STATE WATER SURVEY, IV.

By E. H. S. BAILEY, Ph. D., and C. C. YOUNG, Analyst.

LAWRENCE, KAN., September 20, 1909.

We have to report to you the following analyses, mostly of city supplies in this state, made in our laboratory since the date of the last report:

SANITARY ANALYSES OF WATERS.
(Parts per million.)

No.	CITY.	Date, 1909.	N. in NH ₃	N. in NH ₃ Alk.	N. in NO ₃	N. in NO ₂	Cl.	Solids	Loss on ignition.....	Oxygen con- sumed.....
43	Topeka: Phillips's spg..	4 5	0.022	0.07	8.00	0.0010	165.0	1625.0	345.4	4.08
44	Winfield:									
	(a) City hall.....				1.00	trace	23.5	384.8	89.6	.....
	(b) River.....				.75	none	34.5	444.0	116.8	.....
45	Emporia:									
	(a) River.....	4 14	0.048	0.212	.....	.....	12.0	302.0	124.0	9.60
	(b) City well.....	4 14	0.042	0.158	1.05	0.0005	21.0	506.0	190.0	8.02
46	Lebanon: City supply..	4 12	0.068	0.086	2.00	.....	12.0	544.0	94.0	4.83
47	Blue Rapids: Proposed supply.....	4 16	0.032	0.054	8.00	.....	30.0	518.0	211.0	3.26
48	Atchison.....	4 14	0.010	0.062	0.35	.....	11.5	459.0	137.0	4.55
49	Minneapolis.....	4 22	0.044	0.068	2.00	.....	48.0	428.0	147.0	6.07
50	Baldwin: Garrett's.....	4 23	0.036	0.088	20.00	trace	38.0	488.0	220.0	8.96
51	Kingman.....	4 4	0.016	0.038	1.70	.....	11.0	195.0	82.0	3.08
52	Fort Scott:									
	(a) Pike No. 7519.....	4 6	0.044	0.104	8.00	trace	50.0	1669.0	300.0	5.84
	(b) Pike No. 7520.....	4 6	0.050	0.094	8.00	0.0005	24.0	655.0	225.0	5.87
53	Oketo: Public school...	4 6	0.026	0.064	3.00	.....	14.0	492.0	155.0	2.60
54	Summerfield: Public school.....	4 6	0.104	0.014	.....	.....	6.0	433.0	110.0	1.89
55	Osage: Proposed sup- ply.....	4 6	0.138	0.152	2.00	0.0030	10.0	496.0	125.0	7.91
56	Leavenworth: Home mine.....	5 14	.....	.....	3.50	0.3200	.....	1833.0	260.0	.....
57	Atchison:									
	(a) Brown's spring...	5 17	0.066	0.058	20.00	.....	56.0	870.0	381.0	2.36
	(b) Deer creek spg....	5 17	0.048	0.036	3.00	trace	14.0	363.0	145.0	2.36
58	Chapman (Poor & Knight):									
	(a).....	5 25	0.020	0.044	7.00	.....	12.6	527.0	220.0	2.68
	(b).....	5 25	0.030	0.050	1.50	.....	8.4	395.0	123.0	1.92
59	Vermillion.....	6 3	0.016	0.036	3.00	trace	23.0	319.0	43.0	2.88
60	Vliets.....	6 3	0.022	0.050	0.50	0.0010	18.0	593.0	62.0	6.00
61	Axtell.....	6 3	0.018	0.030	0.70	.....	14.0	528.0	89.0	1.44
62	Delphos.....	6 8	0.040	0.050	1.00	0.0005	14.0	424.0	92.0	1.84
63	Leavenworth (Dr. Car- penter):									
	(a).....	7 9	0.022	0.016	.....	.....	21.0	487.0	148.0	0.11
	(b).....	7 9	0.016	0.006	0.50	.....	21.0	469.0	116.0	.....
64	Irving.....	7 20	0.008	0.002	12.00	0.0010	39.0	501.0	230.0	.....
65	Beattie:									
	(a) McMahoo.....	7 20	0.046	0.088	16.00	0.0007	131.0	1022.0	520.0	3.29
	(b) Hawk.....	7 20	0.012	0.008	3.00	0.0020	19.0	401.0	144.0	.....
	(c) Dr. Hatch.....	7 20	0.042	0.064	32.00	0.0050	55.0	811.0	414.0	1.54
	(d) J. R. Burnside....	7 30	0.046	0.070	24.00	0.0010	70.0	748.0	314.0	0.39
	(e) Bunsenbark.....	7 30	0.054	0.066	16.00	0.0010	81.0	643.0	297.0	0.90
	(f) Frank Bell.....	7 30	0.058	0.076	8.00	0.0005	39.0	442.0	87.0	0.70
	(g) W. J. Helverin....	7 30	0.048	0.058	12.00	trace	30.0	547.0	255.0	.....
66	Mina: J. D. Kelley.....	7 30	0.036	0.070	32.0	0.0030	56.0	755.0	388.0	0.08
67	Neodesha:									
	(a) No. 1.....	7 26	0.042	0.070	0.7	trace	8.6	243.0	91.0	5.02
	(b) No. 2.....	7 26	0.034	0.092	1.0	.....	1.04	492.0	120.0	15.08
	(c) No. 1.....	7 30	0.049	0.072	1.0	0.0050	12.0	325.0	102.0	3.88
	(d) No. 2.....	7 30	0.050	0.098	1.0	trace	13.0	308.0	127.0	2.14

No.	City.	Date, 1908.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₃	N. in NO ₂	Cl.....	Solids.....	Loss on ignition.....	Oxygen con- sumed.....
68	Chanute:									
	(a) Neosho river.....	7 21	0.046	0.098	0.7	.....	18.0	251.0	92.0	6.06
	(b) Proposed well.....	7 21	0.018	0.044	0.5	.....	68.0	515.0	174.0	0.29
69	Blue Rapids: Proposed supply.....	7 23	0.020	0.008	.....	.....	10.0	426.0	159.0	0.01
70	Ellis.....	7 30	0.058	0.084	8.0	0.0070	30.4	431.0	157.0	4.09
71	Plainville.....	7 23	0.012	0.016	2.0	.....	22.0	334.0	106.0	0.06
72	Paola Pop Manufactory, No. 2123, Tilford.....	8 4	0.050	0.116	4.0	.....	81.0	751.0	291.0	4.66
73	Caney:									
	(a) River.....	8 18	0.194	0.178	0.10	0.0030	26.0	300.0	128.0	4.87
	(b) Water-works.....	8 18	0.178	0.168	1.0	0.0010	27.0	279.0	127.0	2.91
74	Dodge City:									
	(a) Santa Fe well.....	8 20	0.036	0.036	2.0	.....	14.0	422.0	102.0	.....
	(b) City supply.....	8 20	0.028	0.016	2.0	.....	30.0	488.0	128.0	.....
75	Herington: Proposed supply.....	8 19	0.078	0.058	1.0	trace	20.0	577.0	190.0	.....
76	Bonner Springs:									
	(a) Old city well.....	8 20	0.380	0.124	.....	.....	14.0	437.0	162.0	2.25
	(b) City well No. 1....	8 20	8.380	0.176	.....	.....	8.0	435.0	152.0	1.68
	(c) City well No. 2....	8 20	0.400	0.148	.....	.....	10.0	433.0	166.0	1.96
	(d) City well No. 3....	8 20	0.408	0.164	.....	.....	10.0	432.0	156.0	1.85
	(e) Tap water.....	8 20	0.888	0.160	.....	.....	10.0	440.0	163.0	1.55
	(f) Proposed supply..	8 20	0.036	0.072	1.0	0.0050	9.0	452.0	180.0	2.21
77	Cherryvale: Cistern, Central school.....	8 26	.....	.....	0.3	.....	2.0	74.0	27.0	1.61
78	Herington:									
	(a) Munsell spring....	8 23	8.044	0.049	1.0	.....	14.6	450.0	182.0	4.48
	(b) Park spring.....	8 23	0.036	0.058	4.0	0.0030	23.4	714.0	266.0	0.86
79	Elmdale.....	9 1	0.052	0.300	.....	.....	14.0	474.0	199.0	25.99
80	Erie: Santa Fe well....	9 10	0.060	0.114	1.0	.....	98.0	856.0	217.0	1.22
81	Burlington:									
	(a) First ward.....	9 13	0.044	0.094	16.0	0.0010	106.0	1360.0	355.0	3.35
	(b) Central building..	9 13	0.046	0.078	8.0	0.0070	54.0	644.0	187.0	0.93
	(c)	9 13	0.050	0.110	48.0	0.0200	101.0	1191.0	455.0	1.54

DETAILS.

43. Topeka.—This is a well the waters of which are used quite extensively in the city. The amount of nitrogen in nitrates and nitrites suggest that further investigation be made. For mineral analysis, see page 224.
44. Winfield.—(a) This sample was taken from a faucet at the city building. For mineral analysis, see page 224. (b) This sample was taken from the river at the electric-light plant. For mineral analysis, see page 224.
45. Emporia.—(a) The river water is high in albuminoid ammonia, probably on account of suspended organic matter. (b) The city well is much higher in mineral content, *i. e.*, much harder.
46. Lebanon.—Sample taken from the city well.
47. Blue Rapids.—Sample taken from a proposed city well.
48. Atchison.—This sample taken from the Soldiers' Orphans' Home.
49. Minneapolis.—This sample was taken from wells in the Solomon valley about 100 feet from the river. The analysis shows this water to be of excellent quality.
50. Baldwin.—Considering the high nitrates and the fact that the well is within fifty feet of a cesspool, we should regard the water as very suspicious.
51. Kingman.—City supply.

52. Fort Scott. — (a) This well is forty feet deep, used for pop manufactory and is walled up with brick laid in cement. It should be noted that the water contains about twice as much mineral matter, mostly calcium sulfate, as ordinary water. (b) This sample was also taken from a pop factory, and contains considerable calcium as sulfate and carbonate.
53. Oketo. — This sample was the first of a series of waters from public schools of Marshall county, collected by Dr. B. P. Hatch, the county health officer.
54. Summerfield. — Collected by Doctor Hatch.
55. Osage City. — The sample came from a proposed city supply, sent by Dr. E. B. Packer. The high nitrites suggest further investigation.
56. Leavenworth. — The exceptionally high nitrites in this water indicate that it is in some way abnormal. This result may be due to local conditions, or iron pipes that are in contact with the water so that they have a continual reducing action on the nitrates. For mineral analysis, see page 224.
57. Atchison. — (a) Brown's spring, the waters of which are used by St. Benedict's College as a water-supply. (b) Deer creek spring, which was presented to St. Benedict's College for their use.
58. Chapman. — Proposed city supply. (a) Knight's well. (b) Sanborn's well.
59. Vermilion. — Collected by Doctor Hatch from the public school.
60. Vliets. — Collected by Doctor Hatch from the public school.
61. Axtell. — Collected by Doctor Hatch from the public school.
62. Delphos. — Collected and sent in by J. R. Adams.
63. Leavenworth. — (a) and (b) These waters are from the Soldiers' Home, and have been used for medicinal purposes for some years. Their action is undoubtedly due to the calcium and magnesium sulfates present. For mineral analysis, see page 224.
64. Irving. — The high nitrites seem to indicate that an examination of local conditions should be made to see that there is no chance for contamination.
65. Beattie. — (a) Collected by Doctor Hatch from a well used by school children. (b) The composition shows that the water may not be entirely pure, and surroundings should be investigated. (c, d) The high nitrates and nitrites render this water suspicious. (e) This water and the one previous are somewhat suspicious. (f, g) Collected by Dr. B. P. Hatch.
66. Mina. — Collected by Doctor Hatch. The locality should be looked into to find the source of contamination.
67. Neodesha. — (a, b, c, d) These samples are from the new filter plant.
68. Chanute. — (a, b) The Neosho river contains more organic matter, while the well for proposed supply has twice the mineral content.
69. Blue Rapids. — As far as chemical analysis can show this water seems to be of fair quality.
70. Ellis. — The analysis suggests further investigation.
71. Plainville. — Proposed city supply.

72. Paola.—This water is used in the pop factory. Although at the present time the water does not indicate serious contamination, yet the surface conditions should be carefully watched.
73. Caney.—These waters were sent in by R. W. Bates, water-works superintendent, to test the purity of the water for municipal use. Sample (a) comes from the river above intake of water-works, eighteen inches below surface of water. Sample (b) from the city water-supply.
74. Dodge City.—(a) This water is from the Santa Fe well and from the proposed source of the city supply. The sample was taken by Doctor Milton for the city council. As far as chemical analysis will show this appears to be a very good water. (b) This water is from the present city supply, which is inadequate to furnish water for the city. Sample (a) contains less mineral matter, less salt, and only one-third as much sulfates as (b).
75. Herington.—The proposed city supply, and one of the best waters so far received from this locality.
76. Bonner Springs.—Samples (a, b, c, d, e) were taken from the present source of city supply as indicated, and examination made with special reference to the iron contents of water, with the view of eliminating the bad effect of so much iron; (f) is a proposed city supply coming from the McDaniel pasture, northwest of Bonner Springs. Amount of iron oxid contained in these waters is as follows:

(a).....	33
(b).....	21
(c).....	16
(d).....	17
(e).....	16
(f).....	2

For mineral analysis of samples, see page 225.

77. Cherryvale.—This water is from the cistern of the Central school building. Sent in by F. C. Ochler, county health officer.
78. Herington.—(a) From Munsell spring, being examined for a source of a new city supply in Herington. (b) Sample from Park spring, also being considered as a source of supply for the town. Nitrites, high. Sample (a) is of a better quality than (b).
79. Elmdale.—The amount of organic matter renders this water slightly suspicious.
80. Erie.—Santa Fe well. This water was sent in by Burns & McDonald, engineers, Kansas City, Mo., for examination. It is the new source of supply for Erie, Kan.
81. Burlington.—(a) First Ward school. High nitrates and nitrites render this water suspicious. (b) Central school building. High nitrates and nitrites render this water suspicious. The very high nitrates and nitrites in sample (c) render it very suspicious. These waters were collected by Dr. D. Manson, health officer.

TOPEKA WATERS.

Chlorine.	N as NO ₃ .	N as NO ₂ .	Location.	Alkalinity.
48.5	1.50	trace	422 Green, Oakland. Clean. Outbuildings, 50 feet....	Slight.
61	5	.005	Northwest corner Ohio and Pennsylvania, Oakland. Fair sanitation. Barn and closet, 50 feet. Driven well.....	Alkaline.
61	.05	.0005	486 Reno, Oakland. Fair sanitation. Cesspool, 100 feet.	Alkaline.
198.5	14	.0005	1206 East Sixth. Pump well. Creek, 200 feet north. Closet, 50 feet. Unsanitary surroundings.....	Very slight.
187.5	7	.0005	1204 East Sixth. Kelly's Drug Store. Bucket well. Closet, 10 feet; outbuildings and barn, 50 feet. Low ground; 200 feet from creek.....	Very slight.
147	20	.0002	1104 East Sixth. Creek, 100 feet below; barn and closets, 25 feet. On bank of creek.....	Neutral.
89.5	32	.0004	Southwest corner Lake and Fifth, Parkdale. Bucket well. Clean surface. Barn, 25 feet. Closet. Well, 50 feet deep. Creek, 200 feet south.....	Neutral.
57.5	46.1	.002	1003 East Sixth, Parkdale. Closet, 50 feet. Well, 30 feet deep.....	Neutral.
174	80.07	.02	1018 East Sixth, Parkdale. Creek, 100 feet below. Two closets below.....	Neutral.
274.8	24	.08	1201 East Fifth, Parkdale. Unsanitary. Bank of creek. Closet close.....	Slight.
153	46.1	trace	1005 East Sixth, Parkdale; 40 feet deep. Closet near ..	Neutral.
1564	.5	.16	620 Fillmore. Boon mineral well.....	Slight.
80	8.5	none	1140 Lake, Parkdale. Foot of hill. Deep. Dirty sanitation.....	Strong.
148	8	.32	1277 Lincoln. Pump well. Mineral. Bored, 175 feet deep.....	Slight.
77	14	.0005	1207 East Fifth, Parkdale. Unsanitary.....	Alkaline.
189	6	.00012	1217 Jackson. Flat; 50 feet from house, 10 feet from barn.	Strong.
218.5	14	.0008	1126 Taylor. Wooden pump. Cesspool, 35 feet north. Deep. Used by neighbors.....	Strong.
187.5	64	.0015	1400 Fillmore. Bucket well. Used by neighbors.....	Alkaline.
89.5	28	.0015	1524 College avenue. Pump well. Not much used.....	Alkaline.
74	8	.00012	1534 College avenue. Pump well.....	Alkaline.
58	8	.00012	913 West Fifteenth. Bucket well. Used by neighbors. Two outdoor closets, 25 feet. Central Park ponds, 100 feet. Not deep.....	Strong.
96	12	.00011	Seventeenth and Clay. Store. Public well. Shallow. On street.....	Alkaline.
100.5	28	.0001	Seventeenth and Buchanan. Store. Pipe pump. On street. Not deep.....	Strong.
125	28	.108	Euclid school. For drinking. Not deep. Outdoor closets.....	Alkaline.
48.7	6	trace	1419 College avenue. 27 feet deep. Pump well.....	Alkaline.
75	none	trace	421 Reno, Oakland. Sanitary surface conditions. Closet, 75 feet. Driven well, 47 feet deep.....	Alkaline.
102	10	trace	1028 Lawrence, Parkdale. Fair sanitation. Flat. Barn and closet, 50 feet.....	Slight.
34	3.5	none	421 Green, Oakland. Sanitary. Barn and closet, 50 feet.	Alkaline.
146.5	35	.112	1035 Lake, Parkdale. Fair sanitation. Barn and closet, 75 feet. Low ground.....	Slight.

Results of determinations made on the mineral contents of waters indicated in the details of the sanitary analyses (expressed in gms. per liter):

43.	Calcium oxid.....	0.2204
	Magnesium oxid.....	0.0973
	Sulfuric anhydrid.....	0.4736
	Sodium.....	0.2548
	Bicarbonates (HCO ₃).....	0.5780
	Silica.....	0.0106

	(a)	(b)
44. Sodium chlorid.....	0.0387	0.0577
Calcium sulfate.....	0.1443	0.0962
Calcium carbonate.....	0.0529	0.1386
Magnesium carbonate.....	0.0447	0.0594
Silica	0.0092	0.0416
Iron sesquioxid.....	0.0008	0.0094
		(b)
56. Calcium oxid.....		0.4472
Magnesium oxid.....		0.1231
Sulfuric anhydrid.....		0.6741
Iron sesquioxid.....		0.0028
Silica.....		0.0246
Bicarbonates (HCO_3).....		0.3684
	(a)	(b)
63. Calcium oxid.....	0.1142	0.1020
Magnesium oxid.....	0.0270	0.0305
Sulfuric anhydrid.....	0.1589	0.1509
Iron sesquioxid.....	0.0282	0.0090
Silica	0.0066	0.0148
Bicarbonates (HCO_3).....	0.1976	0.1756
		(b)
76. Calcium oxid.....		0.1858
Magnesium oxid.....		0.0142
Sulfuric anhydrid.....		0.0180
Iron sesquioxid.....		0.0020
Silica		0.0370
Bicarbonates....		0.4013
Carbon trioxid.....		0.0132

The Prevention of Infant Mortality.

Among the subjects scheduled for discussion at the Conference on the Prevention of Infant Mortality, to be held in New Haven next November, under the auspices of the American Academy of Medicine, is the economic value of a baby considered as a national asset.

As a matter of fact, so low a valuation has been placed upon the babies in this country that it has not been considered necessary to have an accurate registration of their births. England and other countries have thought differently, and away back in 1838 Great Britain passed the necessary laws. Having been instructed by precept and example by the Mother Country in the way in which they should go statistically, the British colonies are as careful in this regard as the home land.

Massachusetts was the first state in the United States to require

the accurate registration of births, but the "Bay" state's laws have been on the statute-books for only thirty-eight years. Other states have adopted registration laws since then, and a large number of cities are enforcing registration regulations independently of the states in which they are situated. Laws requiring the registration of deaths have been operative for over sixty-five years, and the records are accepted as authoritative by the United States Census Bureau for about one-half the total population of the United States. While it is possible, therefore, to have a fairly accurate idea of the ratio of deaths to the population for the country as a whole, since the birth-rate is obtainable for scattered sections only, it is not possible to gauge accurately the relation between the birth-rate and the death-rate for the entire country.

Public health officers and statisticians who have made a careful study of the situation claim that much of the periodic alarm at the alleged decline of the birth-rate below the death-rate is without foundation. Dr. John S. Fulton, secretary-general of the International Congress on Tuberculosis, held in this country last year, now secretary-general of the International Congress on Hygiene and Demography, to be held in Washington next year, expressed the opinion recently that an examination of the records would prove that the birth-rate is not lower than thirty in any part of this country. The death-rate per thousand, for the registration area, is given in the census report as 16.1. One reason assigned for the apparent decline of the birth-rate in some sections was the carelessness of physicians, who neglect to register the births. Another was the latitude of the law in not requiring practically immediate returns on the part of the physician. It was claimed that such legalized delay was responsible for much of the tacit disregard of the obligation.

New York has recently passed a law which requires the registration of births within thirty-six hours, and this time limit is said to typify the convictions of the most enlightened members of the medical profession in this country and abroad. Early registration makes possible the immediate enforcement of the regulations that are accomplishing a great deal toward the prevention of infantile diseases and blindness, and toward the ultimate reduction of the death-rate.

Once in a while it is possible for a country to see itself as others see it. Take Australia as an illustration. Having occasion to look up a reference in the Australian Year Book for the current year, Doctor Fulton said that he turned to the chapter on vital statistics.

In it Australia's death-rate was compared with that of thirty-two countries. The United States was not in the list; not because such statistics were not available, but because they were not considered sufficiently reliable to warrant their publication. In the same chapter, a comparison was made of the Australian birth-rate with that of other countries. Again the United States was conspicuous by its absence; this time not because the statistics were unreliable but because they were non-existent. In this connection, a statement made by Mr. E. Dana Durand, the director of the census, on the subject of vital statistics in this country, is significant. The statement follows:

"The states having effective registration laws of death are as follows: California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington and Wisconsin. Minnesota, Montana, Nebraska, North Dakota, Ohio and Utah have recently adopted laws whose results are now under observation. Other states have registration laws which do not meet the requirement of this office. The vital statistics reports of the Bureau relate solely to deaths, no state, nor even a single city, being yet certainly known to have a complete registration of births (90 per cent. of all births that occur—minimum standard) to warrant its admission to the registration area for births."

Discussing this phase of the problem, Doctor Fulton remarked that the statistical consciousness of this country as a whole has never been thoroughly awakened; that its statistical conscience has always been asleep. By way of illustration, he instanced the tendency to draw conclusions from "crude" statistics, such as might be made upon a comparison of the figures for Boston and Birmingham, or Boston and Seattle, without regard to corrections for race, or for the length of time during which the cities have been in existence,

If the registration of births were required merely to satisfy some bureau's insatiate statistical hunger, the record might be dispensed with and nobody would suffer from the omission. Its close connection with the life and future health of the babies is what makes it imperative. But there are indirect advantages to be gained from it as well. Many of the relations of the individual to the community and to the state hinge upon what is legally known as the "attained age." On the side of the individual are the right to hold property, the right to vote; on the part of the state, the age at which jury duty, military service, etc., may be required. Many of the difficulties experienced in the practical solution of the

child-labor problem are vitally affected also by the existence or non-existence of an accurately kept register of births. Therefore, leaving the baby with his immediate rights out of the question, and counting up only the advantages to the grown-up, it soon becomes evident that the accurate registration of births conserves the rights of the adult as well as those of the baby.

Epidemic of an Urticarioid Dermatitis Due to a Small Mite (*Pediculoides ventricosus*) in the Straw of Mattresses.

From Public Health Reports.

A preliminary report by JOSEPH GOLDBERGER, Passed Assistant Surgeon, U. S. Public Health and Marine-Hospital Service, and JAY F. SCHAMBERG, Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic.

We wish to invite the attention of the profession to a skin affection of unusual character which has prevailed in an epidemic form in Philadelphia and vicinity since the early part of May, 1909. We have reason to believe that this disease is not confined to the locality indicated, but occurs more or less in various parts of the United States.

In 1901 Schamberg published (Phila. Med. Jour., July 6, 1901) a short article on "An Epidemic of a Peculiar and Unfamiliar Disease of the Skin," examples of which were in that year simultaneously observed for the first time by Schamberg, Duhring, Hartzell, Stelwagon, and other dermatologists in Philadelphia. Since 1901 cases of this same character have been encountered each year, usually between the months of May and October.

Etiology.—The cause of the peculiar affection which we are considering was until recently very obscure. During the months of May and June, 1909, an outbreak (20 cases) of this eruptive disease developed among the crew upon a private yacht docked in the Delaware river. At almost the same time 33 more cases appeared among the crews of four other boats. Besides these 53 cases, we learned in the course of our investigation of about 70 other cases in twenty different private residences and boarding-houses scattered about the city of Philadelphia and its vicinity. In practically every case we were able to determine that the patient had either recently slept upon a new straw mattress or had freely handled the same. The facts elicited by our inquiry enabled us to exclude from consideration the jute or cotton topping or the ticking of the mattresses, and we satisfied ourselves that the essential causative factor was connected with the wheat straw. The mattresses were made by four of the leading manufacturers, all of whom

received a large proportion if not quite all of their straw from the same source in New Jersey.

In order to establish the etiological rôle of the straw mattresses experimentally, one of us exposed his (left) bare arm and shoulder for one hour between two straw mattresses. At the end of about sixteen hours the characteristic itching eruption appeared. Later three volunteers slept upon a mattress during a night and each one developed the eruption at the end of about the same period.

We next took some of the straw and sifted such particles as would pass through the meshes of a fine flour-sieve. The sifted particles were divided into two portions and placed in two clean glass Petri dishes. One of these was then applied for one hour to the left axilla of a volunteer. At the end of about sixteen or eighteen hours the characteristic eruption was present in the area of the left axilla to which the Petri dish of straw siftings had been applied.

Having therefore determined not only by deduction from the epidemiological facts but by experiment that the straw in the straw mattresses was in some way capable of producing the eruption we next sought in the straw for the responsible factor. First we exposed for an hour the second portion of the siftings in a Petri dish to the vapor of chloroform under a bell jar with a view to killing any insect or acarine that might be present. These siftings were then applied to the right axilla of the volunteer to whose left axilla the untreated siftings were applied. While, as has been stated, the application of the untreated siftings was followed by the appearance of the characteristic eruption, the skin to which the chloroformized siftings were applied remained perfectly normal. We inferred, therefore, that the essential causative factor residing in the straw had been killed by the chloroform fumes. Careful scrutiny of some of the fresh siftings from the straw disclosed the presence of a small, almost microscopic, mite. Five of these mites were fished out, placed in a clean watch crystal and then applied to the axilla of another volunteer. At the end of about sixteen hours following this application five of the characteristic lesions appeared on the area to which the mites had been applied.

We established, therefore, that the minute mite which we fished out of the straw siftings was the factor in the straw that was responsible for the production of the eruption. This mite was identified for us by Mr. Nathan Banks, expert in acarina of the United States Bureau of Entomology, as very close to, if not identical with, *Pediculoides ventricosus*.

We have encountered the disease only between the months of

May and October, in Philadelphia and its vicinity. A patient with this affection was exhibited by one of us before the American Dermatological Association in June, 1909. Prominent dermatologists from Boston, Baltimore, New York, Chicago, St. Louis, San Francisco and London stated that they were unfamiliar with the clinical picture presented.

Eruption.—The disease is characterized, as a rule, by an eruption consisting of wheals, nearly all of which are surmounted by a central vesicle, which very rapidly acquires turbid and later pustular contents. This is the peculiar and characteristic lesion of the affection. Instead of frank wheals, the primary efflorescences may be erythemato-urticarial spots or papulo-urticarial lesions. They vary in size from a lentil seed to a finger nail, and are rounded, oval, or irregular in shape. They are of a warm rose color, but only rarely exhibit the pinkish white anemic area seen in the lesions of ordinary "hives." The central vesicle is usually minute, not exceeding a pin-head in size; in other cases it may be larger, acquiring the dimensions of a lentil seed or pea.

The eruption is more or less profuse and usually extends over the neck, chest, abdomen, and back, and in a lesser degree over the arms and thighs. Scattered lesions are often observed on the face, forearms and legs, but the hands and feet are nearly always free. The extent of the eruption and the size of the individual lesions are apt to bear an inverse proportion to each other. In the most profuse eruptions 10,000 or more lesions may be present. In some cases the eruption described may undergo modification and later present patches conforming to the type of erythema multiforme. There are, therefore, three varieties of eruption—(a) urticaria vesiculopustulosa, (b) erythema multiforme, (c) varicelloid type with large central vesicle or pustule.

The eruption is accompanied in well-pronounced cases by the most intolerable itching, which for obvious reasons is worse at night and may seriously interfere with sleep. The pruritis may lead to violent scratching with the production of excoriations.

Systemic Symptoms.—Some patients with profuse eruptions have an elevation of temperature varying from 99° F. to 102° F. There may also be at times malaise and anorexia, although as a rule patients do not complain of feeling ill and rarely seek their bed. There is, in some patients, a moderate enlargement of the subcutaneous lymph-glands. In three instances transient albuminuria was observed.

The affection is apt to be confounded with ordinary "hives" or

urticaria, chicken-pox, and scabies. We have known many such errors of diagnosis to have been made. In one case with a particularly profuse eruption, the patient was under suspicion of suffering from smallpox.

We have received a number of letters from laymen and physicians in Pennsylvania and Ohio alleging that farmers commonly develop a hive-like eruption after contact with oat straw and rye straw, and that these are therefore not used for bedding. There are several references in foreign literature to mites of the genus *Pediculoides* in grains attacking man and producing cutaneous lesions.

Treatment.—The mattress may be exposed to sulfur fumes, to steam, or to formaldehyde in a vacuum chamber to kill the mite. For the relief of the itching and the cure of the cutaneous condition the following has been found efficacious:

R̄ Betanaphtol.....gr. xxx
Sulfur. præcip..... $\frac{3}{4}$ i
Adipis benzoat..... $\frac{3}{4}$ i

Ordinarily the itching will subside within twelve to thirty-six hours and the eruption will disappear in about a week or ten days. Where, however, the cause is not recognized and the use of the mattress is continued, we have known patients to suffer severely for periods of from three to seven weeks, when gradual subsidence and recovery would take place.

We have known patients to be obliged at times to discontinue their daily work owing to loss of sleep and the distress due to itching. Other patients were compelled by their employers to cease work owing to the suspicion of contagion and the opprobrium attaching to the presence of a profuse eruption.

A more exhaustive report of this investigation will, it is hoped, be published later.

Sidewalk Display.

Now that the Kansas pure-food regulation prohibiting outside displays of fruits and vegetables has been in active operation for some months, and has received its trial at the hands of the Kansas grocers, it may be safely said that the plan meets with the approval of a great majority of the grocers of the state.

Some thought that the elimination of the outside display would seriously out down the fruit and green vegetable business, but it has not done so.

“When the new law went into effect,” says one grocer, “I put

in a fountain in my store, and on the shelves under the spray I keep my vegetables always moist, cool and fresh. My berries and fruits are always cool and fresh in the shade of the store, and I believe that the change has been a good thing. Instead of looking at a lot of wilted and sun-struck fruits and vegetables out on the sidewalk, where the dust is blowing and the flies roosting, the customers come inside and see the same things cool, fresh and inviting. While the expense of making the fountain display is a little more, the business is growing and everybody is better satisfied."

It may be that in a few instances the law has hurt business, but these cases are rare, and will usually be found to be due to the fact that the grocer has not taken pains to make a tempting display of vegetables inside.

Some grocers have devoted a section of the front window to the vegetable display, and keep the window wet, dripping and cool with spray. Such a display gets even more attention than an outside display.

From a purely business standpoint the change has been a good one, and from a sanitary standpoint there is no doubt of its desirability.—*Merchants' Journal*.

The Color of Oysters.

There is a great deal of popular misconception about the true color of oysters. Many people in the interior who have never seen anything but the bleached-out tub oyster imagine an oyster is not good if it isn't white.

As a matter of fact, but few oysters in their original state are white. The color of oysters depends largely upon the vegetable and mineral matter in the waters in which they grow. One district will produce an oyster of quite different color from some other district. The oysters whose meats come nearest to being white are probably those known as Blue Points, which are matured in the waters of Great South Bay, Long Island. The oysters around Connecticut and New York are usually of a light grayish color. In some beds in this locality, when the weather turns cold, the oysters will take on a greenish tinge. We have seen oysters from the lower Chesapeake, in Maryland, with a decided reddish cast. Oysters on the Gulf coast tend toward a brownish tinge and when quite fat take on a creamy color. The color does not affect the flavor or quality of the stock in any way.—*Exchange*.

Railway Sanitary Abominations.

From Boston Transcript.

Since the first day of the present month the common drinking-cup has been banished from all trains, depots and schools in the state of Kansas. At the same time the Lehigh Valley Railroad Company requires all consumptives who travel on its trains to carry sputum cups and private drinking-cups. Kansas as a state and the railway company as a public corporation have taken a stand sadly needed in this country. We claim to be taking advanced views with reference to public health and our people demand public school inspection in all its refinements, millions of dollars are expended each year to establish healthful conditions, and at the same time some of the most obviously unclean and unsafe arrangements are permitted to remain without much remonstrance. The passenger-car drinking-cup in particular is an abomination, not only from its passing into the hands and to the mouth of all sorts and conditions of men, but from its location. It is usually at a tank recessed into the toilet-room and suggests the taking of a drink of water at a time when the hands of the individual have the best possible opportunity to convey infection. The whole arrangement of sanitary appliances in the ordinary railway-car is so abominable that one can hardly understand why boards of health and legislatures have not taken up the matter. It would be difficult to invent more undesirable conditions. The rooms on the passenger-cars are rarely furnished with water for washing the hands, although this should be the primary requirement of such a place. The ice-water tank as a part of the usual combination seems always questionable, first as to its cleanliness, second as to the purity of its supply of water, and third as to the handling of its ice. It seems probable that the tanks go for long times without cleansing. The water may be from questionable supplies, for little attention is given to this. The replenishing of the supply is sometimes under questionable conditions, with a dingy watering-pot whose abiding place between trains may be astride the sink-rim in the toilet-room of a large station. And as to the ice, it is customarily put into the tanks by the brakemen, who handle it with hands that are far from clean, and without the intermediation of the ice-tongs. These conditions are not difficult to remedy, and they persist simply because the public has not realized what they are. And then there is the drinking-cup.

State Legislatures in Consumption Crusades.

Appropriations of over \$4,000,000 for the suppression of consumption have been made by twenty-eight state legislatures in session during the past year, according to a statement issued to-day by the National Association for the Study and Prevention of Tuberculosis.

Since January 1, 1909, forty-three state and territorial legislatures have been in session. Of this number twenty-eight have passed laws pertaining to tuberculosis; eight others have considered such legislation, and in only seven states no measures about consumption were presented. In all, 101 laws relating to the prevention or treatment of human tuberculosis were considered, and out of this number 64 were passed.

Of the sixty-four laws passed, fourteen were in reference to building new state institutions. New state sanatoria for tuberculosis will be built in Pennsylvania, Connecticut (where three will be erected), Arkansas, Oregon, South Dakota, North Dakota and Florida. In New York, North Carolina, Indiana, Massachusetts, New Hampshire and Maine, appropriations have been made for enlarging sanatoria, already being built or in operation. There are now twenty-seven states where such institutions have been established. Every state east of the Mississippi, except Illinois, West Virginia, Kentucky, Tennessee, South Carolina and Mississippi, have provided hospitals for tuberculosis patients.

Five states—Illinois, New York, Ohio, Minnesota and Iowa—passed laws giving their county officers power to erect tuberculosis sanatoria without resorting to a special vote. In Maine, Connecticut, Rhode Island, New Jersey, Michigan, Iowa and Kansas, laws providing for the strict reporting and registration of tuberculosis were passed. Only five other states, including the District of Columbia, have such laws. The National Association considers laws of this character as the first requisite in an organized movement against tuberculosis.

Laws prohibiting promiscuous spitting in public places were passed in Maine, Pennsylvania, New Jersey, Kansas and Connecticut. Spitters in these states will be prosecuted and fined.

Ten states have this year granted nearly \$100,000 to be spent only for the education of the public about tuberculosis. In some states traveling exhibitions will be used, while in others lectures and literature will be the chief means of education. The states

making provisions of this sort are California, New Jersey, Kansas, New York, Rhode Island, Iowa, Minnesota, Porto Rico, Delaware and Texas.

The statement of the National Association calls particular attention to one fact, which shows the remarkable interest in anti-tuberculosis work evoked during the past year, namely, that fully one-third of the \$4,000,000 appropriated this year is by special legislation and for new work. The last Congress appropriated, in addition to this sum, nearly \$1,000,000 for the maintenance of the three federal sanatoria in New Mexico and Colorado. It is estimated besides that the numerous county and municipal appropriations made or to be made for tuberculosis work for next year will aggregate at least \$3,000,000, making the official public expenditures in the United States for the wiping out of tuberculosis at least \$8,000,000.

Tuberculosis Notes.

In Germany there are 99 public sanatoria for adult consumptives with 10,539 beds, besides 36 private sanatoria with 2175 beds; in 18 sanatoria for children with tuberculosis there are 837 beds—a total of less than 13,000 beds. In the United States there are over 300 sanatoria with over 15,000 beds, showing that this country is in the lead in the anti-tuberculosis war. France has only 12 sanatoria for adult consumptives, with a total capacity of 148 beds. All of these institutions are private except the sanatorium at Agincourt.

The United States government operates three tuberculosis sanatoriums—one for soldiers and officers of the regular army at Fort Bayard, N. M.; one for seamen in the merchant marine, and others employed in coast service of the government, not in the navy, located at Fort Stanton, N. M.; and one for officers and enlisted men in the navy at Las Animas, Colo. The first hospital is conducted by the Department of War, the second by the United States Public Health and Marine Hospital Service, and the latter by the Navy Department.

Letters and mail-bags are frequent carriers of tuberculosis. According to testimony recently given before the postal commissioner of the British Empire, during the last twenty years eighty per cent. of the deaths among letter-sorters had been due to consumption, contracted by the men after they had entered the service.

Overdoing It, as Usual.

Behold!
We are badly North-Poled
Between a Cook's tour
And a Peary, sure,
And we hardly know
How to go
To get onto the proper
North Pole hopper.
We've got the Pole
Cinched in its hole
Up there
In the frapped air,
And the Starry Banner of the Free
Floats over its gelidity,
But what of that?
My scat!
Finding the Pole is done with,
It's what we must do to show
Our proper appreciation
Of the conquest of ice and snow.
Somebody's gone and done it,
Somebody must be paid
In the praise of a grateful people
For efforts he has made.
But, say,
With two in the way,
How the dickens and tomhill,
Are we to settle the bill?
By gum,
Ain't it too bum,
That after all these years
Of hopes and fears,
Of loss and gain,
And arctic pain,
Two
Blew
In at once? Say,
That's no way
To work a whole land
For its glad hand,
We love the Pole, we do;
But, oh; you
Two!!

W. J. Lampton.

BULLETIN

OF THE

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No. 10.

OCTOBER, 1909.

VOL. V.

TO COUNTY HEALTH OFFICERS.

Beginning with the next (November) issue of the Bulletin, the name and address of all county health officers who have not sent in their reports for the preceding month will be published as delinquent.

Report is required, whether there be any items to be reported or not. If there is nothing to report, send in the blank and say so. Blanks are sent from this office every month for the report, which is expected not later than the 10th of the following month.

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VITAL STATISTICS

Reported to the Kansas Board of Health for September, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
									Cases.	Deaths.	Cases.	Deaths.
The State...total, September, 1909...	1								42	0	24	0
Allen									0	0	12	0
Anderson									0	0	0	0
Atchison									0	0	0	0
Barber									0	0	0	0
Barton	0	0	7	0	1	0	0	0	0	0	0	0
Bourbon	2	2	1	0	1	0	0	0	0	0	0	0
Brown	1	1	6	0	1	0	0	0	0	0	0	0
Butler	0	0	2	0	0	0	0	0	0	0	0	0
Chase	0	0	4	0	0	0	1	0	0	0	0	0
Chautauqua	2	1	0	0	0	0	0	0	0	0	0	0
Cherokee	2	3	2	0	2	2	3	1	0	0	0	0
Cheyenne	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	2	0	2	0	3	0	0	0	1	0
Clay	0	0	1	0	0	0	0	0	0	0	0	0
Cloud	1	0	2	0	1	0	0	0	0	0	0	0
Coffey	0	0	2	2	0	0	0	0	0	0	0	0
*Comanche												
Cowley	3	2	1	1	0	0	1	0	0	0	0	0
Crawford	1	2	4	3	11	2	0	0	0	0	0	0
Decatur	1	0	2	1	0	0	0	0	0	0	0	0
Dickinson	0	0	0	0	1	0	4	0	0	0	0	0
Doniphan	0	0	1	1	2	0	1	0	0	0	8	0
Douglas	4	4	2	0	2	0	5	0	0	0	0	0
Edwards	0	0	2	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	2	0	0	0	0	0
Ellis	0	0	0	0	2	1	0	0	0	0	0	0
Ellsworth	0	0	3	0	0	0	0	0	0	0	0	0
Finney	4	1	0	0	0	0	0	0	0	0	0	0
Ford	1	1	5	0	0	0	0	0	0	0	0	0
Franklin	0	0	11	2	0	0	4	0	0	0	0	0
Geary	0	0	0	0	1	0	1	0	0	0	0	0
Gove	0	0	1	1	0	0	0	0	0	0	0	0
Graham	2	0	1	1	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
Gray	1	1	0	0	0	0	0	0	0	0	0	0
*Greeley												
Greenwood	0	0	3	1	2	0	0	0	0	0	0	0
Hamilton	0	0	1	0	0	0	0	0	0	0	0	0
Harper	0	0	1	0	16	1	0	0	0	0	0	0
Harvey	0	0	1	0	3	0	0	0	0	0	0	0
Haskell	0	0	1	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	4	0	0	0	0	0	0	0	0	0
Jackson	0	0	6	1	0	0	0	0	0	0	0	0
Jefferson	4	3	2	2	1	0	1	0	0	0	0	0
Jewell	1	0	5	0	0	0	0	0	0	0	0	0
*Johnson												
Kearny	0	0	3	1	0	0	0	0	0	0	0	0
Kern	0	0	0	0	0	0	1	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	1	1	0	0	14	1	5	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth	0	0	6	0	2	0	1	0	0	0	0	0
Lincoln	2	1	0	0	0	0	0	0	0	0	0	0
Linn	0	0	2	0	4	4	0	0	0	0	0	0
Logan	0	0	1	0	0	0	0	0	0	0	0	0
*Lyon												
*Marion												
Marshall	0	0	0	0	0	0	0	0	0	0	0	0
McPherson	0	0	3	1	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	9	0	0	0	0	0	0	0
Miami	0	0	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	11	2	2	1	2	0	0	0	0	0
Montgomery	3	1	2	1	1	0	0	0	0	0	0	0
*Morris												
*Morton												
Nemaha	1	0	1	0	0	0	0	0	0	0	0	0
Neosho	1	1	4	1	3	1	0	0	0	0	0	0
Ness	0	0	6	0	0	0	0	0	0	0	0	0
*Norton												
Osage	4	1	4	0	2	0	0	0	0	0	0	0
*Osborne												
Ottawa	1	1	3	1	0	0	0	0	0	0	0	0
Pawnee	0	0	5	0	0	0	2	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	0	0	0	0	0	0
Pratt	0	0	4	0	0	0	0	0	0	0	0	0
Rawlins	0	0	1	1	1	0	0	0	0	0	0	0
Reno	3	1	14	4	9	0	2	0	0	0	0	0
Republic	0	0	4	1	0	0	0	0	0	0	0	0
Rice	0	0	1	1	0	0	3	0	0	0	0	0
Riley	5	1	0	0	5	2	0	0	0	0	0	0
Rooks	0	0	3	2	0	0	0	0	0	0	0	0
Rush	0	0	1	1	0	0	0	0	0	0	0	0
Russell	2	0	3	0	0	0	0	0	0	0	0	0
Saline	1	1	9	2	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	1	0	0	0
Sedgwick	2	2	3	0	1	0	4	1	0	0	1	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	0	0	1	0	0	0	0	0	0	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
*Smith												
Stafford	1	0	3	0	0	0	0	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens												
Sumner	2	2	10	1	0	0	3	0	0	0	0	0
Thomas	0	0	3	0	4	0	0	0	0	0	0	0
*Trego												
Wabaunsee	2	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	6	0	0	0	0	0	0	0	0	0
Washington	0	0	11	0	0	0	1	1	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	1	0	0	0	0	0	0	0	0	0	0	0
Woodson	0	0	1	1	0	0	0	0	0	0	0	0
Wyandotte	1	0	1	0	3	0	11	0	0	0	0	0
Cities:												
Atchison	1	1	2	1	4	0	1	0	0	0	0	0
Coffeyville	2	0	6	2	0	0	0	0	0	0	0	0
Fort Scott	0	0	2	1	2	0	0	0	0	0	0	0
Kansas City	2	11	23	6	46	2	2	0	0	0	1	0
Leavenworth	5	5	6	0	1	0	4	0	0	0	0	0
Parsons	1	0	1	1	2	1	3	0	1	0	0	0
Pittsburg	1	1	3	0	3	0	0	0	0	0	0	0
Topeka	2	3	5	5	5	0	6	0	2	0	0	0
Wichita	3	3	26	4	1	0	2	0	0	0	1	0
State Institutions.	181	1	3	0	0	0	0	0	0	0	0	0

* No report.

Improper breathing is a frequent cause of consumption. A large majority of people are too lazy or too ignorant to breathe deep, and hence the lungs are developed only to part of their capacity, and thus afford a fertile field for the growth of the tuberculosis germ.

DRUG ANALYSIS No. XXIII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The present report from the drug laboratory, it is hoped, will reach as many druggists of the state of Kansas as possible, because, especially, of the two medicinal preparations discussed, namely, "Beef, Wine and Iron," and "Sweet Spirits of Nitrous Ether."

The principal aim of the Pharmacopœia and the National Formulary, it is well known, is to secure uniformity in medicinal preparations. The federal law and the state laws very strongly support this idea of uniformity by adopting the Pharmacopœia and National Formulary as official standards.

The preparation known as "Beef, Wine and Iron" (*Vinum Carnis et Ferri*) is a preparation standardized, so to speak, by the National Formulary. It is well known as a solution of extract of beef in water, alcohol, sherry wine and syrup, flavored with compound spirit of orange; each dessertspoonful representing 0.264 gm. extract of beef and 0.236 cc. of tincture citro-chlorid of iron. The finished preparation, when made of a good extract of beef and other ingredients, is of a light orange to a dark orange color, and after standing will precipitate little more than a trace of insoluble material. The medical profession, in prescribing this preparation, seems warranted in the assumption that, as it has an official standard, it is of practically uniform composition. Whenever and wherever dispensed it should therefore represent practically the same proportion, and the same percentage of extract of beef, of iron and of alcohol. As the food and drugs law recognizes the preparation, the pharmacists are likely to be called to account for any great variation from the standard, but it should be stated that we have in it, as officially formulated, inherent elements of variability. It might be classed as one that may vary *within certain wide limits*. This will appear if we will examine carefully the official (N. F.) formula, referring in detail to some of the essential ingredients:

Sherry Wine.—There seems to be no standard for this article. A standard for *Vinum album* (U. S. P. and N. F.) is obtainable, but in neither case (the U. S. P. or N. F.) is it mentioned that this liquid is related to sherry wine. It leaves a chance, at least, for employing a so-called sherry wine of extremely variable quality and of variable alcoholic strength; that this is the case—that this chance

is taken—is confirmed by our examination of some of the market preparations of beef, wine and iron.

Quantity of Sherry Wine.—Assuming that we have a standard for sherry wine, the quantity of this wine employed in the N. F. formula is necessarily slightly variable. No two operators may produce the same quality of preparation, and still may follow conscientiously the formula, because the N. F. directs, in the first part of the operation, that alcohol be distilled off, and *to the residue* sherry wine be added sufficient to make 1000 cc. Now, the quantity of wine added will vary in proportion to the concentration of the residue which remains from the distillation. Some operators may concentrate the residue more than others. This, it may be said, causes a variation practically negligible, but it nevertheless shows that the liquid in question cannot be supposed to be brought to as high a degree of uniformity as that of the better established official preparations.

Extract of Beef.—Much has been said of the slight nutritive value of extract of beef. But, however little nutriment it may possess, its quality should not be lost sight of. We meet, in the market, extreme variations in it, as will be shown. “Extract of Beef” has grown to represent several widely different preparations. For example: Leibig’s Extract of Meat (often employed as extract of beef) may be obtained from mutton. Genuine beef extracts may be more or less salty, have different percentages of peptone, of water, and differ in physical properties. It may have been concentrated *in vacuo*, in open pans, concentrated at high temperature, etc., so that we may not expect absolute uniformity in this preparation. It is well, therefore, that the pharmacist should recognize this, and use care in selecting a good product for pharmaceutical purposes. Our examinations of the various wines of beef and iron on the market seem to indicate that many are not made with a view to conforming to the official (N. F.) process and formula.

Some twenty-five brands of “Beef, Wine and Iron.” sent to the laboratory by the inspectors of the state have been examined. These were made by different manufacturers. A few of these manufacturing firms we have been unable to trace. One of these we should especially note: The “Philadelphia Pharmacal Association.” In order to locate this “firm,” we have corresponded with different manufacturers in Philadelphia, and have made personal inquiries ourselves in the city of Philadelphia, and thus far we have been unable to find the location of this manufacturing company. It should be stated in this connection that wherever the manufac-

turer's name appears on the label, the manufacturing house should be substantial enough to make itself evident by an ordinary investigation.

For the purpose of investigating the variability of the preparation as exemplified by the brands of "Beef, Wine and Iron" sent in to the laboratory by the inspectors of the state of Kansas, we submit the following number of analyses, arranged in tabular form. Numbers 1 and 2, at the bottom of the column, were National Formulary preparations made by ourselves; the No. 1 being made from Leibig's Extract of Meat, and No. 2 from Armour's Extract of Beef.

ANALYSIS OF BEEF, WINE AND IRON.

Laboratory number.	Per cent. alcohol as stated on bottle.	Per cent. alcohol found, approx.	Weight of total solids in 100 cc.	Weight of inorganic solids in 100 cc.	Weight of Fe ₂ O ₃ in 100 cc. (gm.)
2524.....	20.0	21.8	25.076	0.641	0.216
2525.....	24.0	18.5	12.007	0.967	0.120
2526.....	18.0	18.0	18.116	0.566	0.040
2527.....	24.0	22.0	12.779	1.519	0.224
2528.....	15.0	13.0	4.691	0.442	0.024
2531.....	*	18.0	9.122	0.952	0.088
2532.....	†	14.7	13.354	5.462	0.040
2533.....	25.0	16.8	13.268	0.924	0.192
2534.....	16.0	17.4	6.077	1.563	0.272
2535.....	21.0	18.7	9.383	0.870	0.016
2536.....	18.0	14.8	11.403	0.403	0.040
2537.....	18.0	18.8	15.321	0.858	0.080
2539.....	23.0	19.7	9.738	0.76	0.144
2540.....	*	12.0	23.710	0.747	0.072
2541.....	18.0	18.7	14.254	0.617	0.052
2542.....	16.0	14.8	10.637	0.458	0.048
2543.....	16.8	15.4	9.547	0.467	0.176
2557.....	16.0	18.6	13.800	1.445	0.176
2561.....	17.0	15.7	7.687	0.545	0.425
2581.....	18.0	16.7	8.989	0.849	0.096
2666.....	20.0	16.7	25.653	0.924	0.216
2680.....	12.0	20.5	9.799	0.962	0.472
2700.....	20.0	18.3	5.834	1.090	0.012
1.....		14.0	11.848	0.790	0.192
2.....		13.7	11.721	.....	0.184

* Not declared.

† Not more than 18 per cent.

The variability will also be shown in a condensed form by an exhibition of the following data:

1. Price: From 50 to 75 cents per pint (retail); from 25 to 42 cents per pint (wholesale). In a few cases the price was not noted.

2. Percentage of alcohol declared: From 12 to 25 per cent.

3. Percentage of alcohol found: From 12 to 22 per cent. In all but two cases the percentage declared was greater than that found.

In one case, however, the declared percentage was 12 per cent. and the percentage found was 20.5 per cent. In another case the percentage declared was 25 per cent. and found to be 16.8 per cent.

4. Total solids: Variation from 4.691 gm. to 25.553 gm. in 100 cc. This immense variation was due to sugar content.

5. Inorganic solids: Variation from 0.403 to 1.563 in 100 cc.

6. Iron (Fe_2O_3): Variation from 0.012 to 0.472 in 100 cc.

7. Color (estimated in 100 cc. burette): Variation from light orange-red to very dark reddish-brown.

8. Sediment (deposited in 100 cc. tube): Variation (by measure) from a mere trace to 6.5 cc.

9. Proteids (?) precipitated by bromin in a graduated 100 cc. tube: Variation (by measure) from 5 cc. to 30 cc.

It is needless to say that such variability is unwarranted; still, when we consider that this preparation has scarcely emerged from the class of unofficial proprietary articles it is not to be wondered at. Great liberties will likely be taken with it unless some one is here and there called to account for not adhering to the N. F. formula. It is fair to assume that the Board of Health will only be carrying out the spirit of the law if it insists upon a more strict adherence to the National Formulary.

SPIRITS OF NITROUS ETHER (SWEET SPIRITS OF NITER).

The pharmacist's attention should again be called to the instability of this preparation. Our inspectors not infrequently find this ethereal liquid kept, contrary to the directions of the U. S. P., in half-gallon or gallon bottles, exposed more or less directly to the sun's rays. This is sure to cause decomposition, but diffused light, if the preparation is kept in small, amber-colored bottles, causes little or no deterioration. Using every possible precaution, however, the delicate constituents of the liquid are likely to change, and the preparation becomes weaker, due to the escape of ethyl nitrite, for the boiling-point of this ethereal salt is so low (17°C.) that it readily escapes, even at ordinary temperatures, from the alcohol in which it is dissolved. The ethereal salt (or ester) readily undergoes hydrolysis by contact with water, ethyl alcohol and nitrous acid being formed. Hence, in making the liquid from the concentrated spirits of nitrous ether care should be used that the alcohol employed in dilution should contain no more water than the official alcohol (7.7 per cent. by weight). It has been found that some pharmacists neglect this point. Physicians especially are unmindful or ignorant of this when they prescribe the liquid in mixtures having an aqueous vehicle; it would probably be most

advantageous to prescribe the preparation in such a way that it should be mixed with water at the time of administration.

The question naturally occurring to those who have the responsibility of executing the food and drugs law is, What shall be considered as adulterated spirits of niter? In a recent report on this preparation, from Canada (Ottawa, Bulletin 167), the executive officer states: "I am compelled to pronounce all samples containing less than 1.75 per cent. of ethyl nitrite as adulterated under section 7 of the adulteration act (R. S., 1906, chap. 133). The British Pharmacopœia requires for the freshly prepared spirits of nitrous ether: Maximum, 2.55 per cent.; minimum, 2.27 per cent. For spirits kept for some time, etc., minimum, 1.75 per cent." It will be seen, therefore, that a standard is fixed in Canada below which the chemist may consider the article adulterated.

The United States Pharmacopœia requires 4 per cent. of ethyl nitrite, and no minimum percentage is stated. The Board of Health in Kansas has not passed any regulation concerning this article, although it has been a subject frequently brought before the Board. This much should be said, however: Druggists should by all means take proper precautions to enable them to guarantee the article which they dispense. If the inspectors should find that the liquid is carelessly stored, and kept in conditions which will be sure to decompose it, they are likely to take samples for analysis.

A recent circular issued by the Ohio dairy and food commissioner calls special attention to the method of keeping this preparation, as follows: "Your attention is again called to the importance of keeping this product in accordance with the provision laid down in the eighth revision of the U. S. P., which directs that it will keep in small, well-stoppered, dark-amber colored vials, in a cool place, remote from light and fire."

One of the essential points, therefore, it seems, that should be observed by the druggists regarding this article, is *the method of keeping it*. How many druggists observe the explicit directions of the Pharmacopœia? My own personal observation, in Kansas and in other states, leads me to suspect that there is a large percentage of the pharmacists who disregard these directions. This fact may partly account for the reports of various analysts. In Canada, for example, the analyst reports that 63 per cent. of the samples collected were adulterated—that is, were below 1.75 per cent. of ethyl nitrite. Four samples of the seventy-seven examined contained no ethyl nitrite whatever; fifteen others contained less than half of one per cent.

In commenting upon this condition the analyst remarks: "A physician prescribing such an article would assuredly be disappointed in the results; and when we bear in mind that this drug is much used in febrile conditions to produce critical sweating; as a diuretic to relieve strangury produced by cantharides, in all painful affections of the urinary apparatus, whether occasioned by calculous or inflammatory disorders, and in affections of the kidneys in which congestion of these organs occur, . . . and to quiet nervous agitation, we can realize to some extent the danger to the public which is involved in the failure of the druggists to keep this drug up to the pharmacopœial standards." He further adds: "It is evident that the retail druggist must be held responsible for the proper strength of this article."

In the drug laboratory we have been carrying on a series of experiments to show the effect of amber glass and that of light transparent glass bottles on the spirits. We have also compared the glass-stoppered and cork-stoppered bottles. It is needless to give the details of these experiments. We have found that the ordinary glass-stoppered bottle is less valuable than the cork-stoppered. For example, the spirit kept in amber 100 cc. glass-stoppered bottles lost in two weeks 0.4 per cent.; in well corked 100 cc. amber glass bottles 0.2 per cent. The amber glass proves itself far superior to ordinary colorless glass, as would be expected. Spirits of niter kept in half-gallon amber glass bottles lost its strength more than twice as rapidly, kept under the same conditions. It would seem, therefore, that the pharmacopœial requirements should be strictly observed by pharmacists in keeping spirits of nitrous ether, otherwise there is great danger of its deterioration.

Another very important point should be brought to the attention of jobbers as well as retailers: Sweet spirits of niter should not be marketed in small retail packages and distributed in the manner which grocers and others market and distribute flavoring extracts. It has been the custom for jobbers to put up for retail trade packages of spirits of niter. We have examined many of these from grocers' shelves and they almost invariably prove worthless. It is safe to say that the Board should rule that all such packages are illegal and the preparation should be confined to the stock of the pharmacist, who should be held responsible for its quality, for the proper storage and dispensing of it. Ready-for-use packages of the finished product, such as described, should be withdrawn from the market.—[L. E. S.]

Joined to this report we beg leave to submit the results of a series of analyses on the various preparations of drugs sent us recently by the state inspectors. These include essence of peppermint, spirits of camphor, tincture of iodine, and various proprietary articles. It should be noted, in this connection, preparations labeled "Essence of Peppermint" should conform in strength to that required by the Pharmacopœia, namely: 10 cc. of the oil of peppermint in 100 cc. of the preparation.

ESSENCE OF PEPPERMINT.

Lab. No.	Insp. No.	NAME.	City.	Cubic centimeters of oil in 100 cc.	Remarks.
3224	8118	Thos. Vick Roy.....	Armourdale	3.00	Colorless.
3231	2117	Dr. L. G. Graves.....	Atwood.....	4.10	Water added, 24.07%.
3238	2122	P. J. Morrison.....	Hillsdale.....	7.99	Colorless.
3238	2124	McGrath & Meyer.....	Paola.....	9.99	
3249	2135	Twentieth Century Drug Co.	Osawatomie	5.88	
3256	2142	G. P. Wormeringer.....	Sharon Springs...	6.76	
3257	2143	H. D. Lee Mercantile Co....	Salina.....	1.63	Water added, 46.4%.
3265	2151	J. H. Orton.....	Gove.....	9.32	
3268	2154	J. C. Farley.....	Hays	9.99	
3269	2155	C. A. Harkness .....	.....	11.23	
3272	2158	M. R. Smith	Russell.....	5.33	
3276	2162	Zeman Pharmacy.....	Wilson	8.32	
3279	2165	Dr. J. T. Pindell.....	Wellsville	3.22	Water added, 13.79%.
3280	2166	A. E. Lessender	Somerset.....	3.00	Water added, 31.6%.
3281	2167	A. L. Howard & Bro.....	Louisburg	8.99	
3294	8123	Chas. B. Spencer & Co.....	Iola.....	9.51	
3322	8131	Waters & Danforth.....	La Harpe.....	8.32	
3329	8138	A. B. Brown.....	Thayer.....	2.62	Water added, 34.3%.
3371	8180	Pattison & Leonard.....	Cedar Vale.....	9.32	
3418	8226	Geo. M. Smith	Augusta.....	5.20	
3431	8239	English Pharmacy.....	Sterling.....	8.99	

SPIRITS OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Gms. of camphor in 100 cc. of spirit.	Remarks.
3210	8104	Whimater's Drug Store....	Kansas City	9.20	
3218	8112	Marsh's Drug Store .....	.. ..	12.60	
3223	8117	W. H. Stone .....	.. ..	10.90	
3235	2121	Dr. J. W. King.....	Hillsdale.....	*	
3239	2125	McGrath & Meyers.....	Paola.....	11.07	
3240	2126	H. T. Clifton.....	.. ..	11.32	
3247	2133	Harry Reed.....	Osawatomie	15.17	
3248	2134	A. F. Meek.....	.. ..	11.76	
3252	2138	A. W. Youngberg .....	.. ..	10.50	
3253	2139	Dr. W. J. Scott.....	Sharon Springs...	11.17	Water added, 18.18 %.
3262	2148	Marsh Bros.	Menlo.....	10.45	
3264	2150	V. J. Benson	Gove.....	11.07	
3266	2152	C. S. Wall.....	Quinter.....	5.95	
3274	2160	A. J. Thielen	Dorrance	13.37	
3277	2163	James Latta.....	Wilson.....	11.07	
3283	2169	Johnson Cooperative Co....	Prairie Center....	8.86	
3331	8140	Dr. M. J. Land.. ..	Piqua.....	12.01	Water is present.
3334	8143	Scarlett's Palace Drug Store.	Yates Center.....	10.60	

* Sample insufficient for analysis.

TINCTURE OF IODINE.

Tincture of iodine should show by assay about 6.86 grams of iodine in each 100 cc. of tincture and should contain about 5 grams of potassium iodide in each 100 cc. of tincture.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in each 100 cc.	Potas. iodide.
3198	8092	B. W. Otterman.....	Kansas City.....	5.57	Present.
3199	8093	A. A. Ecker.....	.. ..	6.92	..
3200	8094	Riverview Pharmacy.....	.. ..	7.30	..
3201	8095	Frank Summers.....	.. ..	6.37	..
3202	8096	Leverich Drug Company.....	.. ..	3.60	Absent.
3203	8097	C. E. Seaman.....	.. ..	5.80	Present.
3206	8100	Wyandotte Drug Company.....	.. ..	1.80	..
3207	8101	J. A. Woods.....	.. ..	6.75	..
3208	8102	Otterman's Pharmacy.....	.. ..	6.30	..
3209	8103	McLaughlin Pharmacy.....	.. ..	6.90	..
3212	8106	Taylor & Pearson.....	.. ..	6.20	Absent.
3213	8107	G. Q. Lake & Co.....	.. ..	7.15	Present.
3214	8108	Scott & Poinsett.....	.. ..	7.12	..
3215	8109	Sees Pharmacy.....	.. ..	6.77	..
3217	8111	Paradowsky & Swartz.....	.. ..	12.50	..
3219	8113	Simpson Block Drug Store.....	.. ..	5.82	..
3220	8114	Red Cross Pharmacy.....	.. ..	5.77	..
3221	8115	Rose & Gordon.....	.. ..	7.77	..
3222	8116	Clafflin Drug Company.....	.. ..	6.55	..
3223	8117	A. E. Krokstrom's Pharmacy.....	.. ..	6.45	..
3227	8121	G. D. Jones.....	.. ..	7.80	..
3233	2149	O. J. Benson.....	Gove.....	6.96	4.48 gm.

Lab. No. 3089, Insp. No. 2069. Tincture of Iodine. Scott & Taber, Holton. Found to contain 7.3 grams of iodine in 100 cc. of tincture. Potassium iodide is present.

Lab. No. 3104, Insp. No. 2084. Pil. Ferri et Quininae Citratis. A. B. Carter, Valley Falls, retailer. Passed.

Lab. No. 3203, Insp. No. 8097. Tincture of Arnica. Eureka Drug Company, Kansas City. Passed.

Lab. No. 3224, Insp. No. 8118. Tincture of Ginger. C. R. Rice, Midland Park Pharmacy, Kansas City. Contains 88.5 per cent. of alcohol. Passed.

Lab. No. 3243, Insp. No. 2129. Caloquine. Caloquine is a tea recommended by the manufacturer, Caloquine Medicine Company, Pittsburg, Kan., for a variety of diseases. Caloquine contains the following drugs in a contused condition: Fennel, glycyrrhize, triticum, coriander, senna, frangula, elderberry blossoms, and podophyllum.

Lab. No. 3245, Insp. No. 2131. Quinola. Made by H. S. Peterson & Co, Chicago. Quinola, combined with alcohol and water, is recommended by the manufacturer as hair tonic. Quinola was found to contain quassia (a carbonate) and quinine.

Lab. No. 3270, Insp. No. 2156. Chamberlain's Essence of Peppermint. Chamberlain Medicine Company, Des Moines, Iowa. Found to contain 3.37 cc. of oil in 100 cc. of the preparation, and about 20 per cent. added water.

Lab. No. 3406, Insp. No. 8215. German Catarrh Cure. Brown Manufacturing Company, Leavenworth, Kan. Found to contain Po. elm, salt, and a camphor.

FOOD ANALYSIS No. XXV.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and
Prof. H. L. JACKSON, M. S., Food Analyst.

The following is a report on "Vanilla Extracts" which have been examined recently. It will be observed that most of them are passed, and it should be said in this connection that quite a number of high-grade extracts from reliable manufacturers are included in the list. This perhaps makes it appear that vanilla extract in general is of a better quality than is really the case. The list is not at all representative of the whole body of extract on the market in this country.

No.	Remarks.	No.	Remarks.
1379.....	Illegal.	6251.....	Doubtful.
1806.....	Passed.	6253.....	Passed.
2041.. ..	Illegal.	6273.....	"
3178.....	"	6297.....	"
3353.....	Doubtful.	7010.....	"
5034.....	Passed.	7011.....	"
6208.....	"	7081.....	"
6210.....	"	7106.....	"
6212.....	"	7148.....	Illegal.
6220.....	"	7212.....	Passed.
6221.....	"	7213.....	"
6223.....	"	7215.....	"
6224... ..	"	7422.....	"
6228.....	"	7464.....	"
6247.....	Illegal.	7538.....	Illegal.

ADDITIONAL DATA TO ILLEGAL EXTRACTS LISTED IN TABLE.

No. 1379. Label, "Crown Concentrated Extract of Vanilla." Manufacturer, Crown Chemical Works. Retailer, A. F. Walker, Walcott. Winton lead No. 0.17. This extract is misbranded by its claim of "Concentrated Extract," and adulterated because something has been substituted for the soluble constituents of vanilla beans.

No. 2041. Label, "Essence Vanilla." Manufacturer not given. Retailer, M. F. Moore, Westmoreland. This is misbranded by its claim of "Essence Vanilla," and adulterated because of some substitution for the soluble constituents of vanilla beans.

No. 3178. Label, "Midland's Pure Flavoring Extract Vanilla." Distributers, Midland Grocery Company, Denver, Colo. Retailer not given. Winton lead No. 0.63. Misbranded by its claim "Fla-"

voring Extract of Vanilla," and adulterated because of some substitution for the soluble constituents of vanilla beans.

No. 3353. Label, "Eddy's Extract of Vanilla, Two Ounces Full." Manufacturer, Eddy & Eddy, St. Louis, Mo. Retailer not given. This is a weak extract. Winton lead No. 0.86. This extract is not declared illegal, but is doubtful.

No. 6247. Label, "Standard Extract of Vanilla." Manufacturer, Malacca Mills, Kansas City. Retailer, W. C. Buck, Kansas City. Winton lead No. 0.23. Misbranded by its claim "Standard Extract of Vanilla" and adulterated because of a substitution for the soluble constituents of vanilla beans.

No. 6251. Label, "Eddy's Gold Medal Extract of Vanilla." Manufacturer, Eddy & Eddy, St. Louis, Mo. Retailer, R. G. Johnson, Seneca. Winton lead No. 0.79. This is a weak extract. It is not declared illegal, but is doubtful.

No. 7148. Label, "Purity Triple Extract of Vanilla, Warranted Pure. Serial No. 6593." Manufacturer, Purity Chemical Company, Chicago, Ill. Retailer, Fleming Coal Company, Skidmore. This is a weak extract, and is misbranded by its claim "Triple Extract of Vanilla," and is adulterated in that it does not contain the soluble constituents of 30 grams of vanilla beans in each 100 cubic centimeters of extract.

No. 7538. Label, "Flavoring Extract of Vanilla, Primrose Brand." Manufacturer, Parkhurst-Davis Mercantile Company, Topeka, Kan. Retailer, S. E. Moss. Contains a coal-tar dye. Is misbranded by its claim "Extract of Vanilla," and adulterated in that it is colored to make it appear better than it really is.

VINEGAR.

NUMBER.	Ac .	Solids.	Ash.	Alkalinity of soluble ash.	Remarks.
2170.....	3.56	1.01	0.33	42.50	Illegal.
9044.....	5.61	2.90	0.35	41.80	Passed.
9045.....	3.10	1.51	0.33	35.52	Illegal.
9051.....	4.43	1.49	0.19	21.64	"
9052.....	3.10	1.62	0.42	38.51	"
9053.....	4.28	2.77	0.31	34.84	Passed.
9061.....	3.40	2.06	0.30	23.64	Illegal.
9064.....	4.37	2.30	0.32	40.47	Passed.
9071.....	4.59	2.63	0.30	32.13	"

ADDITIONAL DATA TO ILLEGAL VINEGARS LISTED ABOVE.

No. 2170. Label, "Cider Vinegar." Manufacturer, not given. Retailer, Johnson County Coöperative Association, Prairie Center. "Said to have been bought from a farmer. Did not know how

long it had been in the store. Was selling it as cider vinegar."—Inspector's report. See analysis. Illegal.

No. 9045. Label, "Pure Cider Vinegar." Manufacturer, Locota Cider and Vinegar Company, Locota, Mich. Retailer, F. C. Noller Mercantile Company, Alma. See analysis. Illegal.

No. 9051. Label, "Cider Vinegar." Brand, "Silver Leaf Pure Cider Vinegar." Manufacturer, Otto Kuehne Preserving Company, Topeka, Kan. Retailer, Forgeson Bros., White City. See analysis. Illegal.

No. 9052. Label. "Cider Vinegar." Brand, "Silver Leaf Pure Cider Vinegar." Otto Kuehne Preserving Company, Topeka, Kan. Retailer, Jenkinson Bros., White City. See analysis. Illegal.

No. 9061. Label, "Cider Vinegar." Brand, "Cider Vinegar." Manufacturer, Otto Kuehne Preserving Company, Topeka, Kan. Retailer, D. A. Silliman, Lecompton. See analysis. Illegal.

LEMON EXTRACT.

No. 2113. Label, "Essence of Lemon." Manufacturer not given. Retailer, F. A. Orr, Kansas City. Lemon oil not to exceed 0.3 of 1 per cent. Retail price, 10 cents per ounce. "Taken from shelf bottle in drug-store." Illegal.

No. 2116. Label, "Extract of Lemon." Manufacturer not given. Retailer, D. C. Cashman & Co., Atwood. Lemon oil 0.9 of 1 per cent. "Taken from shelf bottle labeled 'Tr. Lemon,' labeled 'Ext. Lemon' when sold." Illegal.

No. 2127. Essence Lemon. Lemon oil, 5 per cent. Passed.

No. 2145. Label, "Ess. Lemon." Manufacturer not given. Retailer, W. W. Gibson, Wa Keeney. Lemon oil not to exceed 0.3 of 1 per cent. and colored by coal-tar dye. "Taken from shelf bottle in drug-store." Illegal.

No. 6408. Lemon oil, 5.3 per cent. Passed.

No. 7472. No. label save inspector's. Manufacturer, Brownfield & Davis, Iola, Kan. Retailer, C. C. Kennedy, Yates Center. Lemon oil not to exceed 0.3 of 1 per cent. Retail price 45 cents for three ounces. Illegal.

No. 7561. Lemon oil, 5.4 per cent. Passed.

No. 9055. Lemon oil, 5.4 per cent. Passed.

No. 9057. Label, "Tone Brothers Reliable Extract Lemon, Two Ounces Full Measure." Manufacturer, Tone Bros., Des Moines, Iowa. Retailer, Forgeson Bros., White City. This sample is passed in respect to content of lemon oil, but the bottles are short measure. One bottle was 6.25 per cent. short measure. Second bottle was 12½ per cent. short measure. Illegal.

No. 9090. Label, "Tinc. Limon. Townsend the Druggist." Manufacturer not given. Retailer, Townsend Drug Company, Abilene. Lemon oil, 0.4 of 1 per cent. Retail price, 25 cents for three ounces. Tinc. Limon is equivalent to extract of lemon, and therefore should contain 5 per cent. lemon oil. Illegal.

TABLE SYRUPS AND MOLASSES.

Insp. No.	Sucrose by Clerget.	Water by Abbe refractometer, 100 solids.	Purity.	Ash, total.	Ash, soluble.	Ratio, soluble to insoluble.	Alkalinity soluble ash, cc. N/10 acid per 1 gal. syrup.	Alkalinity soluble ash, cc. N/10 acid per 1 gal. syrup.	Winton lead number.	Products.	Remarks.
7263	31.79	23.60	41.60	3.80	3.18	5.0	4.24	1.85	.....	Molasses	Doubtful.
7365	59.93	35.26	92.50	0.81	0.73	9.1	0.85	0.14	1.72	Maple syrup.	Illegal.
7328	56.69	31.90	83.30	2.53	.....	.....	2.41	0.66	4.68	Open-kettle molasses.	Passed.
7566	67.56	29.06	95.40	0.49	0.35	2.9	0.46	0.19	1.08	Maple syrup.	Doubtful.
7582	47.57	20.14	59.70	0.30	0.16	1.1	1.98	0.26	1.31	Refinery syrup.	Passed.
7583	63.70	32.30	94.00	0.51	0.34	2.0	0.49	0.35	1.08	Maple syrup.	"
7585	64.00	31.50	93.50	0.25	0.19	3.1	0.31	0.20	0.26	50% maple, 50% cane.	Passed.
7587	60.61	36.00	94.70	0.62	0.46	2.9	0.66	0.21	1.65	Maple syrup.	Illegal.
7588	61.44	34.30	92.00	0.08	0.05	1.7	0.10	0.06	0.11	Cane and maple.	Misbranded.

ADDITIONAL DATA TO ILLEGAL SYRUPS LISTED ABOVE.

No. 7263. Label, "Palmetto Plantation Molasses." Manufactured for Ridenour-Baker Grocer Company, Kansas City, Mo. Retailer, W. H. Alsoop, Fort Scott. This is not declared illegal, but as it has the appearance, from analysis, odor, and taste, of a second molasses, it is held that it should be so labeled.

No. 7365. Label, "York State Maple Syrup." Manufacturer, Boyle & Williams, Bradford, Pa. Retailer, B. F. Ivey, Hutchinson. Abnormal by its low insoluble ash, high alkalinity of soluble ash, low alkalinity insoluble ash, low insoluble ash, and high ratio soluble ash to insoluble ash, and excess of water. These taken together point to adulteration. Illegal.

No. 7587. Label, "Guaranteed Strictly Pure Geauga County Maple Syrup." Canned by the Coates Company, Chagrin Falls, Ohio. Retailer, W. F. Honnen, Great Bend. Contains an excess of Water. Illegal.

No. 7588. Label, "Silver Seal Table Syrup, a Blend of Cane and Maple Syrup." Manufacturer, Boyles & Williams, Bradford, Pa. Retailer, W. F. Honnen, Great Bend. This product showed by its analysis that it could contain only a very small quantity, if any, of maple syrup, and cannot be considered to be more than a maple-flavored syrup. It is held to be misbranded.

BOTTLED SODA WATERS, OR "POP."

No. 2168. Label, none save inspector's, but the bottle is marked with the name of Becker & Co., Leavenworth. Manufacturer or jobber, W. F. Hempstead, Garnett, Kan. Retailer, R. S. Williar, Chiles. Examined for saccharin, which was not found. The contents of the bottle is brilliantly colored with coal-tar dye. All bottles in the case from which sample was taken were unlabeled. Illegal.

No. 2173. Label, "Cherry-Ola, Artificially Colored, Delicious, Nutritious, Invigorating, Cooling. Bottled Under the Authority of the Cherry-Ola Company, Sidney, Ohio." Manufacturer, Suchulthies Bros., Kansas City, Mo. Retailer, S. E. Carner, Overland Park. Saccharin not found. Is brilliantly colored by coal-tar dye and has the merest suggestion of the flavor of cherry. Its claim of being nutritious and invigorating can well be questioned.

No. 2189. Label, none save inspector's. Blown in the bottle appears "V Donat, 576 West 19th St., Chicago." Said to be bottled by Leon L. Walters, Hiawatha. Retailer, Amos Brown, fairgrounds, Robinson, Kan. Saccharin not found. Brilliantly colored by coal-tar dye. Illegal.

PICKLES.

No. 7569. Label, "Choice Sour Pickles." Manufacturer, Wichita Vinegar Works, Wichita, Kan. Retailer, Sweet Mercantile Company, Dodge City. These pickles were of a brilliant green color and were examined for copper as a coloring-matter. Copper was found to be present. Illegal.

Regulating the Sale of Patent Medicines.

The German government has quite recently put into effect certain decidedly stringent rules and regulations concerning the sale of patent medicines. As one of the BULLETIN's valued exchanges remarks, this excellent example will almost certainly be imitated by the government of the United States in the not distant future. Following is a short summary of the provisions of the German law:

It enacts that the exteriors of bottles, tins and other vessels containing medical compounds shall bear conspicuously printed upon them (a) the name and address of the firms manufacturing them and (b) the name and address of the retailer who sells them. (This does not apply to wholesalers.)

It forbids the use of any written or printed statement in praise of the article or compound, any testimonial or recommendation, or

anything in the nature of an advertisement or an inducement to buy.

Chemists and other retailers are required to know the ingredients of the compounds if they sell them on their own responsibility. Where they do not or cannot know the ingredients of the articles and compounds they are forbidden to sell them, except by order of a qualified doctor, dentist or veterinary surgeon (in the latter case the article must be for the use of animals only), and a separate order, duly signed and dated, must be received for each separate supply. The retailers must also see that medicines, which they can only supply to the order of one of those qualified practitioners, bear labels which conspicuously state their condition.

Lengthy lists of patent medicines governed by these restrictions have been officially circulated, and it is enacted that public advertisements of the articles mentioned is strictly prohibited, the term "advertisements" to include anything and everything whatsoever in the nature of an advertisement, directly or indirectly, such as an announcement offering to supply on request printed matter, the object of which is to further sales.

While some of the crusades against patent medicines may have been inaugurated and carried on from sinister or sensational motives, it is very evident that the step already taken by our government to compel the manufacturers to disclose the nature of the content of medicines has done much good. What has been done should be regarded merely as the beginning of a needed effort to protect the credulous or the despairing invalid from the depredations of manufacturers of compounds which cure nothing, but which too frequently create dangerous and degrading habits.

It is said by thoroughly conscientious chemists who have taken the pains to investigate some of the catarrh remedies and other preparations that they are composed largely of dangerous drugs. The victim of disease, attracted by the glowing language of the advertisements and the wonderful testimonials which accompany them is tempted to use them and does so. In every instance the relief which he experiences is illusory and too often he finds himself the victim of a habit from which it is very difficult to free himself. He is an ignorant victim of deadly drugs.

If some such regulations were in force in our country as the foregoing the suffering public would be much better guarded than they are at present, although it is much better now than before the enactment of the national food and drugs law. When one is sick and the ministrations of the family physician do not seem to be

followed by good results one is tempted to grasp at every straw that presents itself. That is one reason why the patent-medicine trade is such a prosperous business. Men and women long for a restoration to their former health. Hence their willingness to experiment with a new medicine every time an attractive advertisement falls into their hands.

The BULLETIN believes each family should have a reputable and experienced physician to whom those who are ill should unfold their symptoms. It believes that the best results follow a special preparation for each individual case. For that reason it urges care in the use of patent-medicines and increasing severity in government regulations.

Report on the Twelfth International Congress on Alcoholism, and the Sixteenth International Medical Congress.

By REID HUNT, M. D., Chief of the Division of Pharmacology, Hygienic Laboratory, United States Public Health and Marine-Hospital Service.

In accordance with bureau letter of July 3, 1909, detailing me to attend the Twelfth International Congress on Alcoholism, to be held in London, July 18 to 24, 1909, and the Sixteenth International Medical Congress, to be held in Budapest, Hungary, August 29 to September 4, 1909, I have the honor to make the following report:

TWELFTH INTERNATIONAL CONGRESS ON ALCOHOLISM.

I arrived in London July 18, the day on which the congress was officially opened. The sessions of July 19 were devoted to general meetings, the opening of the exhibitions, and registration. On the succeeding days there were both general meetings and special scientific sessions, continuing throughout the day and usually also the evening. A great variety of subjects was discussed at these meetings. Thus in the scientific sessions the effect of alcohol upon immunity, heredity, muscular and mental energy, its relation to tuberculosis, insanity and nervous diseases, and its use in the treatment of pneumonia and enteric fever were discussed in a conservative and scientific manner. *The consensus of opinion of the speakers seemed to be that alcohol, in any form, is but seldom of distinct value in the treatment of disease*, and some evidence was brought forward to show that alcohol even in moderate amounts has an unfavorable effect upon offspring and has a tendency to lower resistance to infection. The dangers of alcohol to those with any tendency to nervous or mental diseases was especially empha-

sized by Dr. F. W. Mott, and the effects upon children by Professor Clouston. The statements frequently made that alcohol is, *per se*, a predisposing factor to tuberculosis received some but not marked support from an elaborate statistical study by Henschen, of Sweden. The statement that alcohol in very moderate amounts has a markedly injurious action upon certain mental processes was not confirmed in a series of very careful experiments by Professor Rivers, of Cambridge.

Figures were shown illustrating how marked has been the decrease of the use of alcohol in the hospitals of various countries. In connection with the discussion of the medicinal use of alcohol I presented a paper prepared by Mr. Wilbert on the alcoholic beverages in the different pharmacopœias and on the use of wine in the preparation of drugs. I called attention to the fact that only the United States and Greek pharmacopœias include whisky, and suggested that its recognition by these pharmacopœias gave it an undue prominence as a medicinal agent; also that wine is very undesirable as a pharmaceutical agent, and that the preparations made with it should be discarded from the pharmacopœia. The paper was well received by the medical members of the congress.

A very great variety of subjects was discussed at the general meetings. Among the speakers were a number of members of Parliament, prominent lawyers (including the lord chief justice), railway officials, officers of the navy and army (including the surgeon-general), teachers, clergymen, and others. Much attention was given to temperance teaching in the public schools, the relation of temperance to life insurance, the treatment of the inebriate, and the economic and legal aspects of the alcohol problem. One of the most important of the general meetings was devoted to "Alcohol and the efficiency of the national services," at which representatives of the naval, military, postal, railway and legal professions spoke. The extraordinary growth of total abstinence in the British army and navy was especially emphasized—forty per cent. of the army in India are total abstainers. This growth of total abstinence in the army was attributed by the surgeon-general to a very considerable degree to the improvements that have been made in the surroundings of the soldier, such as improved housing and food. One speaker pointed out the need of giving much more attention to the physical welfare of the sailors of the merchant marine. The unhygienic conditions under which many of them live were held to be the chief cause of their intemperance, and the deterioration

caused by these two factors (intemperance and lack of hygiene) was called a national danger.

An extensive exhibition was held in connection with the congress. This consisted largely of charts, books, etc., used in the temperance instruction in schools of different countries. An important feature of the exhibit was a series of posters prepared by the boards of health of various cities of England on the relation between alcoholism and disease. These posters consisted largely of brief quotations from the parliamentary commission on physical deterioration and are displayed in railway and other public places.

There were about 1400 members of the congress and practically all of the civilized countries were officially represented. The congress was held under the auspices of the British government, which had representatives from each of the leading departments. The congress adjourned to meet at The Hague in 1911.

En route from London to Budapest I visited the offices of the ministry of agriculture of Belgium, under the auspices of which the articles of agreement concerning the unification of potent medicaments in different pharmacopœias were prepared; these articles were signed by the leading countries. This work of bringing about greater uniformity in the different pharmacopœias is being continued by the establishment of an international commission (secretariat), which is to be a means of communication between the committees engaged in pharmacopœial revision. Eight of the leading countries have already agreed to contribute to the support of this commission. The United States government, not controlling the United States Pharmacopœia, has not agreed to contribute, but I was informed that the United States Pharmacopœial Convention would be entitled to full participation if it would assist and that it would be formally invited to do so. It is believed that the organization of the commission will be completed within a few months and that there will be a meeting of the members at Brussels next year in connection with the decennial international congress on pharmacy.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS.

I arrived in Budapest August 27, and August 28 attended the meeting of the committee of the International Union for the Protection of Child Life.

The Sixteenth International Medical Congress was formally opened August 29, when addresses of welcome and responses from delegates of various governments were delivered. There were no

other general meetings except the concluding one and five lectures of general interest.

The work of the congress was done in twenty-one sections. I registered in the section of pharmacology and therapeutics, which had nine meetings. Nearly a hundred papers, all strictly technical, were read before this section. I presented two papers: One prepared with Doctor Seidell on pharmacopœial preparations of the thyroid gland, and one with Mr. Taveau on the pharmacological action of a number of choline derivatives.

A discussion of special interest to the division of pharmacology was one on the new Hungarian Pharmacopœia, the first copy of which was shown at the meeting. There were also interesting discussions on the claims made for certain proprietary medicines. The papers presented covered nearly every phase of pharmacology and therapeutics and in nearly every case were based upon the experiments or observations of the readers; among the latter were many of the leading authorities on their subjects in the world.

The congress adjourned September 4; the next meeting will be in London.

Symposium on Alcohol and Public Health.

Dr. GEORGE W. WEBSTER, Chicago: The alcohol problem is more important than tuberculosis because of its far-reaching effects. It costs the United States in direct money over two billion dollars. It causes, directly and indirectly, at least ten per cent. of all deaths in the United States. It predisposes to infection, destroys acquired immunity, prevents the occurrence of artificial immunity, lowers vitality and increases mortality in all diseases and in surgical operations. It lessens the power of individuals to resist the injurious influences of extreme heat and cold. It causes deterioration of the quality of mental work. It diminishes the power to withstand fatigue and lessens the efficiency of the individual. It should always be classified as a poison and never as a food or stimulant. It is a public health and sanitary question, and not a moral one, but should be treated the same as fevers, smallpox, and malaria, and by scientific men alone. The alcoholic problem is a medical one, and can only be solved when studied from a scientific point of view.

EFFECT OF ALCOHOL ON THE STOMACH.

Dr. D. H. KRESS, Washington, D. C.: Functional and organic disturbances of the stomach are both a cause and effect of the use of alcohol. All forms of alcohol are dangerous remedies for stom-

ach disorders, as while it quiets pain and discomfort for a time, it creates new sources of discomfort and derangement. Alcohol acts on the appetite and digestion, diminishing the nutrition of the body. All forms of spirits at meals are injurious, and the use of remedies containing alcohol for stomach diseases is contradicted by scientific research and shown to be most dangerous.

DANGER FROM MIXED DRINKS.

Dr. HARVEY W. WILEY, Washington, D. C., discussed the danger from mixed drinks, particularly absinthe, which he declared the most dangerous drink in existence, and urged that legislation should be enacted prohibiting its use in the United States. He called attention to the many tonics on the market whose only value comes from the narcotic action of the contained alcohol or narcotic. An exhibit was made of more than fifty samples of proprietary drugs and drug cures, some of the latter containing as much as twenty grains of morphine to the ounce.

LABORATORY RESEARCH.

Dr. WINFIELD S. HALL, Chicago, in his paper on laboratory researches concerning the action of alcohol on the cells and tissues, concluded as follows:

1. Alcohol is a waste product of tissue metabolism.
2. Alcohol produces a toxic effect on living substances.
3. Alcohol in common with other toxic substances is oxidized in the body.
4. This oxidization is a means of defense, as the products are far less injurious than the alcohol.
5. Because of this defensive oxidization of alcohol, which takes place largely in the liver, the ingestion of more than a small amount of that substance makes the body more liable to other toxic invasions.
6. Alcohol cannot, in the nature of the case, be considered a food.
7. Alcohol decreases the efficiency of muscles, glands and nervous system.
8. Alcohol is a narcotic in its drug action.
9. Alcohol given in minute doses to lower animals seriously impairs fecundity and increases degeneration and race suicide.

ALCOHOLIC NEUROPATHIC ENTAILMENTS.

Dr. CHARLES H. HUGHES, St. Louis: Alcohol scars and taints race stock with as much certainty as syphilis or tuberculosis; and the damaged brain or depraved blood extends far in the future.

Heredity is not a theory. It is a fact that 80 per cent. of the children of drinking parents show the degeneration that has been transmitted in different forms and conditions.

EFFECT OF ALCOHOL ON THE BODY.

Dr. BITTLE C. KEISTER, Roanoke, Va., discussed the effects of alcohol from a scientific point of view, and stated that modern laboratory research and clinical experience denies the tonic and stimulant value of alcohol, and declares that its action is that of an anesthetic and narcotic. The use of alcohol as a beverage, therefore, is a relic of barbarous times.

RESPONSIBILITY IN INTOXICATION.

Dr. ALBERT GORDON, Philadelphia: No one who uses spirits to excess should be considered sane and responsible. The degree of mental and moral paralysis in each case must be settled by a study of the facts. The attempt to draw dividing lines between sanity and insanity is unreal and unscientific. Intoxication is literally insanity and irresponsibility under any circumstances, and will be so regarded in the future.

Meat-Poisoning Epidemic Caused by *Bacillus Enteritidis*.

From California Bulletin.

On December 5, 1908, the Navy Department launched the collier "Prometheus" at the Mare Island Navy Yard. Following the event a lunch was served, which was partaken of by about 2500 people. This was paid for by subscription by the merchants and citizens of Vallejo and served by Leon Cohn, a caterer of San Francisco, all of the food having been prepared in San Francisco and shipped to Mare Island.

Twenty-four hours following the lunch a great number of people who had partaken of it became ill, the number increasing each day until nearly 1000 were ill with the same train of symptoms.

As the guests came from all parts of the state and were prominent in public life, the incident received wide-spread notoriety, our governor, Hon. J. N. Gillett, being one of the victims.

Acting under directions from Drs. Martin Regensburger and N. K. Foster, respectively president and secretary of the State Board of Health, and with the valuable assistance of Medical Director Frank Anderson, Surgeon H. E. Odell and Hospital Steward G. O. Wildasin, of the navy, and my assistant, Dr. Minnie Iland, I was able to determine the cause of the trouble.

By excluding one article of diet after another we found that the meat sandwiches were the probable carriers of infection. Those who ate the salad and cold meat did not suffer, but all who were sick gave a history of eating the sandwiches.

It was not until the evening of December 7 that we were able to obtain any of the food. That evening a young lady called at my office to inform me that her mother and three children of the family were very ill. They had eaten some sandwiches on the evening of December 5. A cousin who had waited on table at the lunch had brought them over, and every member of the family who ate of them was sick. She brought some of the sandwiches to me—three kinds: beef, ham and tongue. I cut a piece off each and dropped it in a tube of bouillon. There was nothing wrong with the ham or tongue, but the beef culture contained an active motile bacillus resembling *colon*; this was carefully plated by Mr. Wildasin, and a bacillus of the typhoid-*colon* type isolated, and by cultivation on different types of media I believe that we have proven that we have present the *Bacillus enteritidis* of Gartner.

SYMPTOMS.

A history of one case will give a good idea of the symptoms present in all. As in all epidemics, some were severely sickened, while others only showed slight discomfort.

"Family of Mrs. D. M. C. Aged thirty-eight, married, mother of seven children, strong healthy woman, never sick before. Saturday evening, December 5, 1908, a cousin who waited on table at the lunch brought over some sandwiches (ham, beef and tongue); three of her children and she herself ate of them. The baby, eleven months old, was given a crust of bread from one of the beef sandwiches and became very ill with vomiting and diarrhea. One of the girls took ill Sunday morning with abdominal pains, nausea, vomiting and diarrhea. The other members of the family were ill by Sunday night, the mother remaining well until Monday night, December 7, 1908. Her first symptoms were nausea, vomiting, severe chills followed by intense pain in the abdomen, headache, cramping of muscles of arms and legs, and severe diarrhea. On December 9 her temperature was 103, pulse 112, and toward evening she became delirious, the delirium lasting three days. She was confined to bed for two weeks, and suffered with pains and cramping of muscles with severe prostration for two weeks more."

This is a typical history of all the severe cases.

In addition to the above symptoms, in two of the very severe

cases we had a marked urticaria followed by desquamation of hands and feet.

HISTORY OF EPIDEMIOS OF MEAT POISONING.

The literature on this subject is very limited, and that obtained is from Novy.

The largest outbreak he reports was in Derby in 1902—210 cases with four deaths, from eating meat pies. Other epidemics have occurred in Germany, England, Belgium, and Holland. In all of these a bacillus resembling the typhoid-*colon* group was present.

A food epidemic occurred in 1888 in Frankenhause. The source of the infection was a cow which was slaughtered on account of severe enteritis. Fifty-seven persons became ill from eating the meat; some ate it raw while others had it boiled or roasted. Three only partook of the broth. The symptoms were those of severe gastro-enteritis followed by desquamation; only one person died. Gartner cultivated from the spleen of the fatal case, also from the flesh and intestines of the cow, an organism which he named *B. enteritidis*. This resembles the *colon* bacillus in many respects.

Since then epidemics have occurred at Cotta near Dresden, Mosselle, Belgium, Rotterdam, Breslau, Posen, and Durham in England. In all outbreaks a bacillus closely resembling *enteritidis* was found to be the cause of the infection.

When you consider that there were as many people sickened at Mare Island as in all the previous epidemics reported by Novy, you can imagine the importance of being able to prove the cause of the trouble.

We have cultivated the bacillus obtained from the beef, have injected a rabbit with pure culture (rabbit died in two hours and forty minutes), and the bacillus was isolated from the interior of the spleen. We have differentiated from *colon* by the different character of growth on blood-serum, potato and agar, cultures in litmus milk not producing a fecal odor, and the fact that indol is not produced.

The bacillus we found in this meat could easily be differentiated from *colon* by its different growth on the above media.

In addition, it showed itself to be a very virulent organism, killing a rabbit in two hours and forty minutes after an injection of 1 cc.; the rabbit weighed 399 grams.

The following table will give the differentiation with the authorities for same:

<i>Colon bacillus.</i>	<i>Bacillus enteritidis.</i>
1. Litmus milk-acid cultures have a fecal odor. (Chester.)	1. Litmus milk-acid and decolorized—cultures have no fecal odor.
2. Indol produced. (Chester.)	2. Indol not produced. (Chester.)
3. Blood-serum; soft white layer. (Sternberg.)	3. Blood-serum; gray layer along line of inoculation. (Sternberg.)
4. Potato; yellow and yellowish brown. (Chester.)	4. Moist shining yellowish-gray layer. (Sternberg.)
5. Motility; sometimes exhibits independent movement, not very active. (Sternberg.)	5. Motility; very active, exhibits independent movement.
6. Agar; abundant soft white layer. (Sternberg.)	6. Agar; grayish yellow growth. (Sternberg.)

TREATMENT OF CASES.

Cleaning out the bowels with calomel in divided doses followed by bismuth subnitrate in ten-grain doses, being careful to avoid meats and solid food, usually cleared up the symptoms. Too quick return to albuminous food produced a return of the symptoms.

The blood-serum of two of the people sick from this epidemic was tested for its agglutination with *B. enteritidis*, but with negative results.

CONCLUSIONS.

1. I believe that I have proved that the cause of the epidemic was the *B. enteritidis* and not the ordinary bacteria of decomposition.

2. That this form of meat poisoning occurs when meat from cows who are suffering with acute intestinal inflammation are killed, and people partaking of it suffer with the symptoms of acute gastro-enteritis; these symptoms are also present even if the meat is well cooked.

3. That the ordinary inspection of meat in the dressed carcass would not show any signs of this disease.

4. The necessity of careful inspection of cattle before and after slaughtering, as it is only in this way that cases of meat poisoning of this type could be recognized.

5. Lastly, that it is my belief that many of the so-called cases of typhoid fever and like intestinal troubles are nothing more or less than types of meat infection, as the symptoms produced are identical, and it is only by obtaining a blood culture in these cases that a differential diagnosis can be made.

Canning Fruit—A New Process For the Housewife.

By H. LOUIS JACKSON, Food Laboratory, State University.

There has lately been received at the state food laboratory at the Kansas State University a package of alleged "Canning Compound," in regard to which all ladies should be informed as to its nature and, for their family's good, warned against its use.

This "antiseptic preparation," sold through the mail by the Price Compound Company, of Minneapolis, Minn., and labeled "Mrs. Price's Canning Compound," is nothing but commercial boric acid, which could be bought at any drug store in the country for from twenty-five to fifty cents a pound, according to local conditions. The Price Compound Company charges \$1.60 a pound in small quantities, and about \$1 a pound when one buys fifteen packages of the preservative at one time.

This is the first and great reason why it is sold by them, and why they do not sell it under its true name, but it is not the worst part of the transaction. One may allow his pocketbook to be injured somewhat without too great concern. It should be a matter of serious consideration when one's health is to be tampered with.

On the package of "Mrs. Price's Canning Compound" it is stated: "May be used in canning all kinds of fruits, and is especially valuable for corn, beans, peas, asparagus, tomatoes, etc. May also be used in making catsup, sweet pickles, or anything that is liable to ferment. It saves money (?), time, labor, worry (?), and insures the best results (?). See book of directions for instructions in using the Compound, and how to do all kinds of canning. The contents of this package is sufficient for four quarts."

There is no doubt that it would make "vegetables," "catsup," "sweet pickles," "canned fruit," and "anything that is liable to ferment," keep, for the package contains thirty grams—about one ounce—of boric or boracic acid and all of it is to be added to one quart. Think of it! The national government is allowing not to exceed one-tenth of one per cent. of sodium benzoate in a few food products *when its presence is stated on the label*, and this firm induces the *public* to put seven to eight times as much in all canned products, and does not let it be known what it is. No regard for the consumers' health, provided some firm can make money.

Let the housewife look further. Contents of one package to four

quarts, seven and a half grams to one quart. Suppose eight persons are served from one quart of corn or beans or peas, etc., then each would receive nearly one gram of boric acid at a single meal. Suppose the catsup and some sweet pickle or fruit used at the same meal, is put up in this way. A person could then easily receive one to two grams of boric acid at a single meal. The United States Department of Agriculture, in its experiments to determine the effect of boric acid in food on healthy young men, seldom gave as much as five grams in a whole day to one person. In a few instances four grams per day per person was given, but usually only one, two, or three grams per person per day was administered and was considered a large dose. If the directions of the Price Compound Company were followed every member of a family would very probably consume one to three grams of boric acid per day, and that month after month.

In the Department of Agriculture experiments above mentioned it was found that, "On the whole, the results show that one-half gram per day is too much for the normal man to receive regularly." Then what will one say in regard to children and old people, or those in poor health, living in a household where "everything liable to ferment" is preserved with three-quarters of one per cent. of boric acid?

The above experiment also showed that about eighty per cent. of the boric acid is eliminated through the kidneys. Do people wish any more burdens put on the kidneys than they already bear?

The same experiments showed a slight but perfectly distinct loss in body weight in those taking boric acid in their food.

They showed that all persons cannot stand the same amount of boric acid without signs of discomfort. Even among healthy young men some were made sick on smaller amounts of preservative than others. The signs of discomfort in such cases are diminishing appetite, feeling of fulness and uneasiness in the stomach, which in some cases results in nausea, with a very general tendency to produce a sense of fulness in the head, which is often manifested as a dull and persistent headache. Sometimes sharp and well-located pains are noticed, which, however, are not persistent.

Every woman should be warned against using *any kind* of a canning preservative, no matter what its name or claims. Firms are putting them on the market under new names or labels and in new forms, but be assured they are never new and cannot be new. They are merely one or more of the same old sulfites, borax, boric acid, sodium benzoate, salicylic acid, formaldehyde, or a number

of other less commonly used chemicals. They are sold at a higher price than they could be bought for at the local drug store, and merely induce people to drug their bodies instead of cooking their fruits and vegetables when they are canned.

Home Production of Babies.

From The Harpoon.

The following dispatch from New Orleans recently appeared in the *Dallas News*:

"A car-load of babies will arrive here in charge of J. C. Butler, representative of the New York Foundling Institute, who has been in the Southern states for several months."

"I really do not know how we are going to supply all the applicants," said Mr. Butler, "if the applications in Texas alone are to be filled."

Texas is a wonderful state, and still her possibilities cannot be properly estimated. She produces about one-third of the cotton crop of the world. She raises enough corn and wheat to feed the nation, and enough pigs and cattle to supply a population ten times her own. Fruits and vegetables are indigenous and go to waste. The wool from her sheep clothe the millions of people who live in the frozen North. Oil spouts from her wells skyward, and her mines of iron, coal and lignite are inexhaustible. By constant attention to business we now raise two politicians where only one grew the previous year, and when the trusts rob our people we rise up and take it away from them. Our educational institutions are second to none, and the song of the traveling evangelist is never silent in the land.

It looks like we ought to be happy, but we are not. The trouble is, our baby crop seems to be a failure—for what reason God only knows. Ostensibly there is no reason. Climatic conditions could not be better. Our natural facilities are ample. To the casual observer it looks like the atmosphere should ring with the mellow wail of the colicky kid and the pungent home-like aroma of paregoric—but it don't. We are not raising half as many babies as we ought to, and as conditions are more than favorable there must be some deep, dark reason for the failure of the kindergarten crop in sunny Texas. What is it?

When a country is blessed with such a climate—such marvelous opportunities for making not only a good living but for the accumulation of a comfortable fortune—where young girls become

grown women before they are old enough to vote, and are so handsome and bewitching they are afraid to go home in the dark, it is a shame and disgrace to be compelled to ship in car-loads of Northern babies to supply the demand for household pets. This may seem silly, and possibly sound like a joke, but it's the Lord's truth.

I am firmly convinced that a childless marriage is the acme of terrestrial punishment and affliction. When life is young and rather giddy, a bouquet of little human buds may seem an encumbrance, but as the years pass by and the hairs begin to frost, a childless home is a plain ordinary hell, and I really pity those who are unfortunate enough to have to endure it. People who have never been to the theater, of course, are not in a position to appreciate the show or discuss its merits or demerits intelligently, and the unfortunates whose homes have never been rumpled and torn up and almost demolished by a gang of happy little rollicking kids will never know what real life consists of until they try it. Just ask the poor, heartbroken fathers and mothers who have nothing left except some little flower-covered grave down in the cemetery, and they will tell you "home is ruined and joy has gone since baby died." They know what it is to have and to lose.

But, seriously, our birth-rate is too low. What's the reason? I'll tell you. Every year we are turning out more cynical old maids and crusty, dyspeptic old bachelors than the law allows or should tolerate. When I was a blooming, blushing, freckle-faced, bow-legged young man, it was a rare thing to ever see a woman or young girl doing any sort of labor except ordinary house work. Nowadays, God bless 'em, they do all the work. You see women stenographers—pounding away for ten hours or more per day, trying to make a living, not only for herself, but frequently for some big, fat, loafing male relative who spends most of his time doing the Marathon stunt around a billiard-table or wearing corns on the cicatrix of his umbilicus rubbing against the mahogany counter of a booze-joint. You find the young girls in the stores, shops, banks, offices, working like galley slaves, performing tasks that nature never intended them to perform. Remember, I do not think it any disgrace whatever for a woman to perform any honorable task in order to earn an honest and independent living, but I do not think it necessary for such vast numbers of our young girls to enter upon these wearisome and nerve-shattering occupations as they are now rushing into. At the present rate, it won't be fifty years until our young men will consider it absolutely unnecessary to work at all, and in all proba-

bility will simply stay at home, work doilies, crochet, drink Lydia Pinkham's Compound and get full on Wine of Cardui.

I don't know as I blame the girls much for not marrying sooner and in larger numbers. It's hard enough for a tiny little scrap of a girl to squall "Hello" until her lungs crack over a phone, or tear calico and domestic ten hours a day for a scant living for herself, much less have to support some big lazy hulk of a husband whose cigar and bar bill amount to more than her salary. When a nervous, high-strung, sensitive woman stands on her feet all day trying to wait on and please a big, clabber-headed, unfeeling public, she is in no condition to go home and properly care for a family. If she is married and has children, she is too worn out to enjoy the society of her little ones or care for them as she would wish to do. When the average mother neglects her baby, rest assured she is physically or mentally incapacitated.

Tuberculosis Notes.

Tuberculosis among the insane is very prevalent. The lowest estimates show that five per cent. of all the inmates of hospitals for the insane in the United States have tuberculosis, while in some cases the ratio is over twenty per cent.

Doctor Bertillon, the eminent French vital statistician, has shown that tuberculosis is twice as prevalent among the retail liquor dealers of France as among other shopkeepers. He attributes it to the fact that the alcohol which they handle and use all day long weakens their bodies and thus renders them more susceptible to the disease germ.

On the basis of 150,000 deaths yearly from tuberculosis in the United States, the National Association for the Study and Prevention of Tuberculosis computes that there are 684,934 persons constantly sick with this disease. Allowing only \$500 as the average earnings of the workman who dies, the annual loss to the country from the ranks of labor alone is over \$114,000,000 each year.

That poverty is a friend to consumption is demonstrated by some recent German statistics, which show that of 10,000 well-to-do persons, 40 annually die of consumption; of the same number only moderately well-to-do, 66; of the same number really poor, 77; and of paupers, 97. According to John Burns, the famous English labor leader, 90 per cent. of the consumptives in London receive charitable relief in their homes.

THE COMMON DRINKING-CUP.

There are still a few,
Who swear
And tear their hair,
And get into a stew,
Because they can't sup
From the unwashed drinking-cup.
You know
It had to go,
For Kansans wash their knives and forks
Before they are used again.
And why not the cup?
Great Scott!
This rot
About the inconvenience of not
Being allowed to swap
Spit
And germs
And filth and other things
With your fellow men,
Is a give-away—when
You roar like that.
Won't you live longer
And be stronger
By being clean?
Well, I guess
Yes.

—S. J. Crumbine, M. D., Topeka, Kan.

BULLETIN

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No. 11.

NOVEMBER, 1909.

VOL. V.

This is an age of baths instead of perfumes.

“Big bugs have little bugs
Upon their backs to bite 'em;
And little bugs have lesser bugs,
And so on *ad infinitum*.”

“* * * They are slaves most base
Whose love of right is for themselves and not
For all the race.”

—James Russell Lowell.

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The Harmful Effects of Acetanilid, Antipyrin and Phenacetin, page 286.

VITAL STATISTICS

Reported to the Kansas Board of Health for October, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

	Typh- beria.					Scarlet fever.		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
	228	47	228	47							
Cloud.....	0	0	0	0	0	0	0	0	0	0	
Coffey.....	0	0	0	0	0	0	0	0	0	0	
Comanche.....	0	0	0	0	0	0	0	0	0	0	
Cowley.....	2	2	5	1	3	0	0	0	0	0	
Crawford.....	0	0	0	4	13	2	0	0	0	0	
Decatur.....	0	0	0	0	0	0	0	0	0	0	
Dickinson.....	0	0	0	0	0	2	0	0	0	0	
Doniphan.....	0	0	0	0	1	0	0	0	0	0	
Douglas.....	4	1	5	0	16	0	0	0	0	0	
Edwards.....	0	0	1	0	4	0	0	0	0	0	
Elk.....	0	0	0	0	0	0	0	0	0	0	
Ellis.....	0	0	0	0	0	0	0	0	0	0	
Ellsworth.....	1	0	0	0	0	0	0	0	0	0	
Finney.....	0	0	0	0	0	0	0	0	0	0	
Ford.....	2	2	0	0	9	1	0	0	0	0	
Franklin.....	0	0	6	1	26	0	0	0	0	0	
Geary.....	1	0	0	0	2	0	0	0	0	0	
Gove.....	0	0	1	0	0	0	0	0	0	0	
Graham.....	4	0	1	0	0	0	0	1	0	0	
Grant.....	0	0	0	0	0	0	0	0	0	0	
Gray.....	0	0	0	0	0	0	0	0	0	0	
Grealey.....	0	0	0	0	13	1	0	0	0	0	
Greenwood.....	0	0	0	0	0	0	0	0	0	0	
Hamilton.....	0	0	0	0	14	0	0	0	0	0	
Harper.....	0	0	1	0	1	0	0	0	0	0	
Harvey.....	0	0	0	0	1	0	0	0	0	0	
Haskell.....	0	0	0	0	1	0	0	0	0	0	
Hodgeman.....	0	1	2	1	1	0	0	0	0	0	
Jackson.....	2	0	2	0	3	1	0	0	0	0	
Jefferson.....	0	0	2	1	1	0	0	0	0	0	
Jewell.....	2	0	0	0	1	0	3	0	0	0	
Johnson.....	0	0	4	0	0	0	0	0	0	0	
Kearny.....	0	0	0	0	8	1	0	0	0	0	
Kingman.....	0	0	0	0	0	0	0	0	0	0	
Kiowa.....	0	1	0	0	10	0	1	0	0	0	
Labette.....	0	0	0	0	0	0	0	0	0	0	
Lane.....	0	0	0	0	0	0	0	0	0	0	
Leavenworth.....	0	0	2	0	3	0	0	0	0	0	
Lincoln.....	1	0	1	1	1	0	3	0	0	0	
Linn.....	12	0	5	0	2	0	3	0	0	0	
Linn.....	0	0	0	0	0	0	0	0	0	0	
Logan.....	0	0	0	0	0	0	0	0	0	0	
Lyon.....	0	0	4	0	6	0	0	0	0	0	
Marion.....	0	0	0	0	0	0	0	0	0	0	
Marshall.....	0	0	0	0	0	0	0	0	0	0	
McPherson.....	2	0	2	0	0	0	0	0	0	0	

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	1	0	0	0	13	1	0	0	0	0
Miami	2	2	4	0	0	0	0	0	0	0	0	0
Mitchell	0	0	1	0	0	0	0	0	0	0	0	0
Montgomery	0	0	3	2	4	0	1	0	0	0	1	0
Morris	1	0	3	0	0	0	0	0	0	0	0	0
†Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	0	0	0	0	0	0	0	0	0	0
Neosho	1	1	4	1	1	1	0	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
*Norton	0	0	0	0	0	0	0	0	0	0	0	0
Osage	2	2	0	0	1	1	2	0	0	0	0	0
Osborne	1	0	2	0	0	0	0	0	0	0	0	0
Ottawa	3	2	3	0	0	0	0	0	0	0	0	0
Pawnee	0	0	4	2	0	0	3	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	20	0	0	0	0	0
Pratt	0	0	5	0	0	0	5	0	0	0	0	0
*Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Reno	5	0	7	1	4	0	1	0	15	0	0	0
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	0	0	1	1	1	0	6	1	6	0	0	0
Riley	0	0	6	0	16	4	1	0	0	0	0	0
Rooks	0	0	12	3	0	0	1	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	0	0	0	0	3	0	0	0	0	0	0	0
Saline	1	1	3	0	0	0	1	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	8	0	0	0
Sedgwick	0	0	0	0	3	0	14	0	0	0	2	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	0	0	1	0	1	0	11	0	0	0	0	0
Sheridan	0	0	0	0	0	0	0	0	10	0	0	0
Sherman	0	0	1	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	2	2	6	1	6	0	0	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
†Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	3	1	5	1	2	1	7	0	0	0	0	0
Thomas	0	0	1	0	0	0	0	0	0	0	0	0
Trego	1	1	1	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	1	0	0	0	0	0	0	0
Wallace	0	0	1	0	0	0	0	0	0	0	0	0
Washington	0	0	3	1	15	1	1	0	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	0	0	1	0	4	0	0	0	0	0	0	0
Woodson	0	0	2	1	4	0	1	0	0	0	0	0
Wyandotte	3	0	2	0	5	0	5	0	0	0	1	0
Cities:												
Atchison	1	1	0	0	1	0	2	0	0	0	0	0
Coffeyville	1	1	3	0	3	0	1	0	0	0	0	0
Fort Scott	1	1	0	0	3	0	3	0	0	0	0	0
Kansas City	3	4	23	3	62	6	25	0	0	0	2	0
Leavenworth	6	2	12	0	12	0	4	0	0	0	0	0
Parsons	1	1	0	0	0	0	2	0	0	0	0	0
Pittsburg	1	1	1	1	7	0	3	0	0	0	0	0
Topeka	2	2	1	1	11	2	6	0	1	0	0	0
Wichita	12	1	9	4	10	0	3	0	0	0	1	0
State Institutions.	190	0	0	0	0	0	0	0	0	0	0	0

† No health officer.

* No report.

The following county health officers were delinquent on October reports at the time of going to press with the BULLETIN:

GREELEY COUNTY.—J. W. Shepherd, M. D., Tribune.

JOHNSON COUNTY.—H. H. Johnson, M. D., Olathe.

LYON COUNTY.—J. M. Parrington, M. D., Emporia.

NORTON COUNTY.—E. L. Wilson, M. D., Norton.

RAWLINS COUNTY.—J. U. Melugin, M. D., Atwood.

DRUG ANALYSIS No. XXIV.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The present report of the drug laboratory, it is hoped, will command the attention of the druggists, not only of the state of Kansas but also the druggists and manufacturers of other states who send into the state of Kansas National Formulary preparations. Attention was called, in the last report, to a standard for "Beef, Wine and Iron." In this report we refer to other N. F. preparations (containing pepsin) which our personal observation leads us to believe are furnished of exceedingly variable composition. We have just entered upon the investigation of the pepsin preparations, but we have gone far enough to call attention to their variability.

Mr. James T. Bowles, of our department, has given his attention to the digestive power of the above class of drug products and thus far has examined those sent in by our inspectors, such as "Elixir of Pepsin and Bismuth," "Elixir of Pepsin, Bismuth and Strychnine," "Wine of Pepsin," and "Pepsin Cordial."

In order to test the N. F. preparations of pepsin, as found on the market, standards were made for the purpose of comparison, as will be seen in the table below, (A), (B) and (C).

Lab. No.	NAME.	Acidity.	Color.	Amount of undigested albumin remaining.
2881	Elixir of Pepsin, Bismuth and Strychnine	Higher than U. S. P...	Reddish brown..	30.0 cc.
2964	Elixir of Pepsin, Bismuth and Strychnine	Higher than U. S. P...	Colorless	31.0 cc.
2901	Elixir of Pepsin and Bismuth...	Higher than U. S. P...	Reddish brown..	31.5 cc.
3075	Wine of Pepsin.....	Higher than U. S. P...	Reddish brown..	31.0 cc.
3028	Pepsin Cordial.....	Acidity high.....	Red.....	24.5 cc.
(A)	Elixir of Pepsin and Bismuth. Standard (N. F.)	0.2 per cent.....	Light yellow....	3.5 cc.
(B)	Elixir of Pepsin, Bismuth and Strychnine. Standard (N. F.)	0.2 per cent.....	Light yellow....	5.5 cc.
(C)	Wine of Pepsin. Standard (N. F.)	0.2 per cent.....	Light wine	Less than 1 cc.
(D)	Dilute (HCl) 0.2 per cent	0.2 per cent.....	.....	28.0 cc.

This table calls attention not only to the variability but to the peptic power. The samples marked (A), (B) and (C) were made according to the National Formulary and employed, as will be observed, as standards. (D) is a dilute (0.2 per cent HCl). An amount of elixirs of wine was taken, which corresponded to 0.0033 gm. of pepsin, for the purpose of the test. Examining the table,

we find that, in the case of the standard elixir (A), the undigested albumin left after two and a half hours' digestion was 3.5 cc. (measured in a 100 cc. cylinder, after standing a half hour). In the case of the standard elixir (B), the undigested albumin, measured under the same conditions, was 5.5 cc. In the case of the standard wine (C), the undigested albumin was less than 1 cc. The dilute (0.2 per cent HCl), (D), without pepsin, left behind as undigested albumin, measured 28 cc. These, it will be understood, are employed as standards, so to speak.

Now, comparing the samples of N. F. elixirs containing pepsin, as embraced within Nos. 2881 to 3028, inclusive, we find that the peptic power of these preparations has practically disappeared. In other words, so far as the digestive qualities of these preparations are concerned, they are practically valueless.

In column 4, which refers to the color of the preparations, it will be noted that there is a variation not only from the standard but a variation among the preparations themselves. An "Elixir of Pepsin, Bismuth and Strychnine" should have a light yellow color and the "Wine of Pepsin" should have a rather light wine color. But the preparations sent in by the inspectors do not correspond with the standard.

It is true that we have barely entered upon the investigation, but we wish to call attention to it early so as to give the pharmacists an opportunity, as soon as possible, to look into any portion of this class of their stock, to see that it conforms, *in physical properties at least*, to the National Formulary preparations as above indicated.

The question of the standard of such preparations as have scarcely emerged from the unofficial proprietary class is a problem which is receiving attention at the hands of those who are interested in the National Formulary and those who are concerned with the food and drugs law. It is needless to say that a very great variability is unwarranted when we have a published formula that pharmacists are supposed to adhere to—a formula that is recognized by the food and drugs law, both federal and state.

In a future BULLETIN we shall give a more extensive report on pepsin preparations.

Our attention has been called to the fact that the federal food and drugs act, in section 7, refers to the "Tests laid down in the United States Pharmacopœia and the National Formulary as the standards." As there is no test given for preparations of this class, therefore it is claimed that they have practically no standard.

But we would call attention to regulation 5, "Standards of Drugs,"

in the Kansas law, which has been made part of the law, and reads as follows:

"A drug bearing the name recognized in the United States Pharmacopœia or National Formulary shall be required to conform in strength, quality and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopœia or National Formulary official at the time of sale or when dispensed."

Therefore, although the National Formulary may not prescribe a test for a preparation, the formula itself is considered a standard and a conformity to it is required.

It should be said that "Wine of Pepsin" is a very generally used preparation and seemingly important. It is official in the Australian, Belgian, Dutch, German, Russian, Japanese, Spanish and Mexican Pharmacopœias. It is recognized in other countries somewhat officially as it is in the United States.

It may be premature at this time to make any aggressive movement on the part of the Board of Health toward unification of these N. F. preparations, but no one will deny that a uniformity is contemplated by the law, and that the spirit of the law, if obeyed, would bring about such uniformity.

Attention is directed, in this month's report particularly, to the result of a more exhaustive study of the subject of tincture of iodine than we have hitherto made. Prof. L. D. Havenhill (chief) summarizes the results of these analyses (178 samples) as follows: Thirty-five of these, or about 20 per cent, contain no potassium iodide; 59 of the remaining 143 samples, or about 41 per cent, are within a limit of 10 per cent above and 10 per cent below the required standard. This indicates that, of the 80 per cent of druggists who are cognizant of the fact that potassium iodide is an ingredient of the official tincture, 84, or about 59 per cent, have either not exercised sufficient skill or else have not the appliances necessary to determine the weight of a 70-gm. charge of iodide within 7 gm. of its true weight. Truly an astonishing condition of affairs.

It should also be noted that Nos. 3309 and 3426 contain considerable added water. This can only be viewed in the light of a willful attempt to cheapen and adulterate this article.

TINCTURE OF IODINE.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in 100 cc. of tincture.	Potas. iodide.
3285 ^①	8064	M. A. Spradling	Dearing .....	.....	.....
3286	8065	H. Clate Fair	Independence	8.17	4.77
3287	8066	Sunflower Pharmacy	"	8.07	4.23
3288	8067	Corner Pharmacy	"	4.67	2.12
3289	8068	I. G. Fowler	"	6.98	5.99
3290	8069	Central Drug Store	"	6.20	3.06
3291	8070	Hebrank Drug Co.	"	6.32	4.47
3292	8071	Geo. T. Brown	"	5.15	2.22
3294	8073	Frank E. Yoe	"	5.10	Absent.
3295	8074	Ross Porter	Neodesha	7.27	5.16
3296	8075	Owl Pharmacy	"	4.22	Absent.
3297	8076	Pierce Bros. & Eson	"	6.25	4.44
3298	8077	L. P. Galbraith	"	7.27	5.83
3299	8078	Santa Fe Drug Store	Independence	5.10	3.77
3302	8081	C. C. McCune	Chanute	8.65	5.18
3303	8082	G. P. Wilder	"	7.82	6.95
3304	8083	U. G. Hoshaw	"	5.42	5.49
3305	8084	Legitimate Drug Store	"	3.80	1.56
3306	8085	Chase W. Brown	"	6.92	5.33
3307	8086	Williams & Brown	"	6.82	4.60
3308	8087	Dunning Drug Co.	"	6.72	4.68
3309 ^②	8088	Oriental Drug Co.	"	3.92	1.82
3310	8089	Owl Drug Co.	"	5.02	Absent.
3311	8090	A. C. Weller	"	4.55	Absent.
3312	8091	A. E. Frazier	"	6.90	4.89
3313	8122	Evans Bros.	Iola	7.15	5.70
3315	8124	J. D. Mundes	"	7.30	5.55
3316	8125	S. R. Burrell	"	6.90	3.93
3317	8126	Doctor Reynolds	"	5.92	2.49
3318	8127	C. L. Cowan	"	3.85	1.96
3319	8128	Moha Pharmacy	"	4.17	3.02
3320	8129	Dr. H. A. Brown	"	5.92	3.03
3321	8130	Dr. J. B. Manley	East Iola	4.12	1.40
3323	8132	G. L. Graen	La Harpe	7.15	Absent.
3324	8133	Dr. S. R. Swan	Gas City	10.10	7.61
3325	8134	C. M. Eaton	Humboldt	3.10	.32
3326	8135	Cooksey Bros.	"	4.56	3.03
3327	8136	Hess Bros.	"	5.95	3.67
3328	8137	Byron E. Eldridge	Thayer	6.62	2.48
3330	8139	O. C. Bailey	Galesburg	6.27	4.82
3332	8141	Simpson & Collier	Yates Center	7.00	Absent.
3333	8142	M. S. Bacon	"	5.30	2.52
3335	8144	Butler's Pharmacy	"	7.57	4.87
3336	8145	Johnson Drug Co.	"	7.37	4.97
3337	8146	Harpster's Pharmacy	Hepler	3.62	Absent.
3338	8147	Ryder & Protheroe	Emporia	7.07	5.23
3339	8148	J. A. Moore Drug Co.	"	7.02	5.07
3340	8149	Jas. C. Carter	"	5.95	6.97
3341	8150	D. W. Hainer	"	3.97	2.73
3342	8151	Lewis & McCandles	"	7.77	3.87
3343	8152	W. R. Irwin	"	6.17	3.71
3344	8153	D. W. Morris & Son	"	6.30	5.71
3345	8154	B. Wheldon Drug Co.	"	8.00	3.08
3346	8155	E. M. Kramer	"	5.25	Absent.
3347	8156	J. M. Price	"	4.52	.91
3348	8157	W. B. Hilton	Cottonwood Falls	6.82	4.99
3349	8158	E. D. Replogle	"	6.67	Absent.
3350	8159	Frank R. Sheets	Strong City	6.60	5.86
3351	8160	Hyndes & Arthur	"	4.60	Absent.
3352	8161	G. W. Britton	Hartford	6.00	Absent.
3353	8162	Puffer Bros.	Burlington	6.37	4.74
3354	8163	W. J. Briggs	"	6.05	3.26
3355	8164	H. E. Cowgill	"	2.12	2.73
3356	8165	W. W. Drug Co.	"	6.92	4.75
3357	8166	A. J. Scofield	Waverly	5.50	Absent.
3358	8167	John W. Cary	"	5.35	Absent.
3359	8168	Dr. Elbert Settle	Harris	8.55	6.50
3360	8169	A. T. Holcomb	Garnett	4.53	Absent.
3361	8170	W. J. Lane	"	7.32	4.75
3362	8171	Welsh Bros.	"	11.75	7.25
3363	8172	J. M. Craig	"	2.82	Absent.
3364	8173	A. W. Graves	"	9.80	5.91

1. Sample insufficient.

2. 30.5 per cent added water.

TINCTURE OF IODINE—CONTINUED.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in 100 cc. of tincture.	Potas. iodide.
3365	8174	Rowe Drug Co.....	Colony.....	6.97	4.61
3366	8175	J. L. Rubel.....	Parker.....	3.92	6.04
3367	8176	W. G. Olmsted.....	.....	7.25	5.09
3368	8177	E. I. Fish.....	Sedan.....	7.32	5.22
3369	8178	R. E. Rathbun & Co.....	.....	6.40	5.23
3370	8179	P. N. Whitney.....	Cedar Vale.....	6.17	4.58
3372	8181	McNaughton & Son.....	Elgin.....	4.97	Absent.
3373	8182	Elgin Drug Co.....	.....	7.22	5.10
3374	8183	Dr. R. Lynn.....	Chautauqua.....	5.10	Absent.
3375	8184	Fish Bros.....	Peru.....	7.37	5.15
3376	8185	A. A. Frank.....	Dexter.....	7.72	5.37
3377	8186	Dr. R. B. Haworth.....	.....	5.42	2.96
3378	8187	W. N. Harris.....	Arkansas City.....	6.22	4.74
3379	8188	Sollit & Swarts.....	.....	7.65	5.02
3380	8189	Bunker & Fritz.....	.....	9.05	6.83
3381	8190	W. H. Lightstone.....	.....	6.85	4.80
3382a	8191a	John S. Cree.....	.....	7.47	4.61
3382b	8191b	E. C. Dye.....	.....	7.80	6.10
3383	8192	Billings & Joyce.....	.....	6.77	3.48
3384	8193	F. O. Thomas.....	.....	7.72	5.95
3385	8194	Brown Drug Co.....	Winfield.....	6.90	4.90
3386	8195	Friedenburg.....	.....	7.02	4.65
3387	8196	J. N. Harter.....	.....	7.17	4.99
3388	8197	W. H. Somermier.....	.....	7.77	5.45
3389	8198	R. B. Bird.....	.....	7.40	5.15
3391	8200	W. A. Farringer.....	.....	7.10	5.26
3392	8201	Plagmann & Doane.....	Wakefield.....	6.90	4.86
3393	8202	R. E. Marsh.....	Severy.....	7.02	4.77
3394	8203	Frank C. Broderick.....	.....	8.85	6.15
3395	8204	De Fever & Son.....	Fall River.....	7.45	5.24
3396	8205	City Drug Store (R. A. Hollis).....	Fredonia.....	6.12	4.97
3397	8206	Pierce Bros. & Coleman.....	.....	6.66	4.53
3398	8207	Butin Bros.....	.....	6.97	5.33
3399	8208	Case Pharmacy.....	.....	7.45	5.27
3400	8209	J. D. Clark.....	Eureka.....	7.32	5.98
3401	8210	C. B. Highbargin.....	.....	7.07	5.27
3402	8211	E. N. Bailey & Co.....	.....	2.85	Absent.
3403	8212	W. W. Morris.....	.....	8.07	6.77
3404	8213	C. N. Selig.....	El Dorado.....	6.60	4.82
3405	8214	Frank W. Anderson.....	.....	7.95	6.56
3407	8216	C. M. McGaughan.....	.....	6.85	5.20
3408	8217	W. G. Miller.....	.....	6.52	3.96
3410	8218	O'Bryan & Tarrant.....	Florence.....	6.75	4.95
3411	8219	Farbet & Ford.....	Marion.....	5.40	Absent.
3412	8220	W. C. Hereford.....	.....	6.90	4.20
3414	8222	Fred A. Brechet.....	Burns.....	2.57	1.10
3415	8223	T. A. Slaymaker.....	Peabody.....	5.87	3.89
3416	8224	D. G. Roberts.....	.....	4.65	Absent.
3417	8225	Grant & Marshall.....	Augusta.....	10.27	4.91
3419	8227	Hedges & Adams.....	Hutchinson.....	7.02	4.05
3420	8228	E. E. Bloom & Co.....	.....	7.95	5.15
3421	8229	Central Drug Store.....	.....	7.25	4.75
3422	8230	C. E. Sidlinger.....	.....	6.12	1.41
3423	8231	Briggs Bros.....	.....	6.82	4.85
3424	8232	A. & A.....	.....	6.65	3.39
3425	8233	M. L. Klinck.....	.....	6.80	4.84
3426③	8234	Dr. J. S. Allen.....	.....	2.80	Absent.
3428	8236	A. & A.....	.....	12.60	9.33
3429	8237	J. C. Purdy.....	Sterling.....	6.17	3.05
3430	8238	J. W. Duff.....	.....	6.40	6.00
3432	8240	Geo. S. Burford.....	Nickerson.....	9.25	6.78
3433	8241	Cook Pharmacy.....	.....	5.70	Absent.
3434	8242	G. L. Wharton.....	Lyons.....	6.55	3.83
3435	8243	Lyons Drug Co.....	.....	5.05	Absent.
3436	8244	Annabel-Alman.....	McPherson.....	5.27	5.06
3437	8245	C. W. Engborg.....	.....	6.20	3.93
3438	8246	Bixby & Lindsay.....	.....	7.22	4.47
3439	8247	C. H. Hubbell.....	.....	4.27	4.45
3440	8248	Hooper Drug Co.....	Great Bend.....	7.15	4.23
3441	8249	C. E. Holmes.....	.....	6.02	3.02
3442	8250	A. & A.....	.....	2.12	Absent.
3443	8251	Doctor Cornwall.....	Mount Hope.....	4.25	2.25
3444	8252	S. R. Seaver.....	Arlington.....	7.52	6.64

3. 21.2 per cent added water.

TINCTURE OF IODINE—CONCLUDED.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in 100 cc. of tincture.	Potas. iodide.
3445	8253	Roger's Drug Store.....	Arlington.....	3.70	Absent.
3446	8254	C. C. Rittenhouse.....	Turon.....	6.50	3.60
3447	8255	Formey's Drug Store.....	.....	4.67	1.81
3448	8256	Owl Drug Store.....	Pratt.....	6.62	4.04
3449	8257	Red Cross Drug Store.....	.....	4.85	Absent.
3451	8259	Peel & Train.....	.....	4.82	Absent.
3452	8260	Lottridge & Lottridge.....	Great Bend.....	6.70	5.42
3453	8261	Cochran's Drug Store.....	Iuka.....	7.82	5.05
3454	8262	C. O'Connell.....	Cunningham.....	5.85	3.70
3455	8263	Nossaman Drug Co.....	.....	4.87	Absent.
3456	8264	Eson & Eggleston.....	Kingman.....	7.45	Absent.
3457	8265	J. W. Cookson.....	.....	6.70	3.40
3458	8266	F. G. Hinton.....	.....	4.42	Absent.
3459	8267	N. H. Kilmer.....	.....	6.35	Absent.
3460	8268	C. S. Arnold.....	Hudson.....	7.00	Absent.
3461	8269	A. & A.....	Stafford.....	6.10	3.50
3462	8270	Webb's Pharmacy.....	.....	6.00	3.64
3463	8271	A. & A.....	St. John.....	6.80	3.81
3464	8272	Tanner & Uhl.....	.....	6.62	4.70
3466	8274a	Demain & Powell.....	Macksville.....	2.68	4.36
3466	8274b	Edgar B. Dykes.....	.....	7.27	5.32
3467	8275	Geo. E. Trump.....	Ellinwood.....	5.42	3.22
3468	8276	H. C. Arnold.....	.....	7.52	4.06
3469	8277	Francis & Haynes.....	Pawnee Rock.....	5.37	Absent.
3470	8278	A. & A.....	Larned.....	6.92	5.10
3471	8279	E. G. Wickwire.....	.....	7.87	5.51
3472	8280	Barber's Drug Store.....	.....	7.07	4.78
3473	8281	A. & A.....	Kinsley.....	7.97	5.82
3474	8282	Chas. A. Mosher.....	.....	7.27	5.37
3475	8283	City Drug Store (Rath & Bainbridge).....	Dodge City.....	6.85	5.77
3476	8284	Palace Drug Store (Bond & States).....	.....	8.52	7.58
3477	8285	Geo. D. Cochran.....	.....	5.65	Absent.
3479	8287	Doctor Fannon.....	Bucklin.....	2.78	Absent.

ESSENCE OF PEPPERMINT.

Lab. No.	Insp. No.	NAME.	City.	Water added.	Per cent oil.	Remarks.
3489	2175	J. D. Peoples.....	Rosedale.....	3.20	Uncolored.
3492	2178	Clyde Leavengood.....	.....	.....	3.75
3501	2187	V. H. Bantleon.....	Reserve.....	.....	8.32
3506	2192	J. I. Taylor.....	Elwood.....	47.90%	.60	
3511	2197	Jacob Miller.....	Wathena.....	7.49	Uncolored.
3513	2199	Geo. McLaren.....	Troy.....	.....	10.14
3515	2201	Drs. A. & H. G. Herring.....	Sparks.....	38.47%	3.87	
3518	2204	A. H. Blakeley.....	Severance.....	.....	8.49

SPIRIT OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Water added.	Per cent camphor.
3488	2174	J. D. Peoples.....	Rosedale.....	.....	9.96
3491	2177	Clyde Leavengood.....	.....	.....	6.53
3495	2181	William McGeorge.....	Argentine.....	.....	9.76
3498	2184	J. C. Rawles.....	.....	.....	10.44
3500	2186	F. Stevens.....	Hiawatha.....	.....	16.16
3502	2188	J. C. Fuger.....	Hamlin.....	.....	8.84
3514	2200	Geo. McLaren.....	Troy.....	.....	10.42
3516	2202	Drs. A. & H. G. Herring.....	Sparks.....	21.80%	3.05

Lab. No. 2999, Insp. No. 1979. Clifton's Brazilian Oil. Manufactured by Clifton Remedy Company, Girard, Ill. "For external use only, in the treatment of Headache, Toothache, Earache, Neuralgia, Rheumatism, etc." Composed largely of the more volatile petroleum products, as petroleum ether, gasoline and petroleum benzine. A small quantity of fixed oil and nitrobenzol is present. The preparation is inflammable. This fact is not stated on the label. Sold under positive guarantee to cure or money refunded.

Lab. No. 3004, Insp. No. 1984. Nature's Oil. A. H. Lewis Medicine Company, St. Louis, Mo. A liniment for internal and external use. Claimed to be efficient in rheumatism, sprains, stiff joints, neuralgia, lame back, toothache, pain in the limbs or any part of the body; also, for any severe internal pain where a powerful diffusive stimulant is required. Found to be composed largely of kerosene and volatile oils, sassafras and turpentine. Contains capsicum. Preparation is non-alcoholic.

Lab. No. 3204, Insp. No. 8098. Concentrated Essence of Jamaica Ginger Compound. Declared to contain 49½ per cent alcohol. Forty-six per cent of alcohol was found.

Lab. No. 3246, Insp. No. 2132. Spurmax. A preparation for making face lotion. Recommended for beautifying the complexion, whitening the skin without use of powder. Said to make sallow, dark, oily skin white; also good for blackheads, tan and freckles. Composed largely of magnesium sulphate, perfumed and tinted pink.

Lab. No. 3278, Insp. No. 2164. Hanford's Balsam of Myrrh. A preparation intended for external use for flesh wounds, lameness on man or beast. Found to contain wood alcohol.

Lab. No. 3493, Insp. No. 2179. Gessler's Magic Headache Wafers. Manufactured by Max Gessler, Milwaukee, Wis. Wafers containing acetanilid and sodium bicarbonate. Guaranteed to cure headache and neuralgia in twenty minutes or money refunded. Declared to be five grains of acetanilid in each wafer. This statement appears on the container.

Lab. No. 3505, Insp. No. 2191. Mrs. Price's Canning Compound. The Price Compound Company, Minneapolis, Minn. A preparation claimed by the manufacturer to be valuable in the canning of all kinds of fruits, also to be used in the making of catsup and sweet pickles. The preparation weighs about 30 grams. Said to be sufficient for four quarts. Mrs. Price's Canning Compound contains 93.4 per cent of boric acid and about 6 per cent of sodium chloride.

Lab. No. 3512, Insp. No. 2198. Doolittle's Chicken Cholera Cure. Claimed to be a safe and certain cure for cholera and gapes among fowls and a valuable antiseptic in the treatment of roup. Prepared by W. A. Doolittle, Sabetha. The base is milk sugar. Each tablet contains about 2.5 grains of corrosive sublimate and some coloring matter.

Lab. No. 3520, Insp. No. 2206. Sweet Spirit of Niter. A. P. Hopple, Lancaster, retailer. Sample was put up in transparent bottle; very acid, and contains practically no ethyl nitrite. Claimed by the manufacturer to contain 70 per cent alcohol and 16 minims of ethyl nitrite per fluid ounce.

Lab. No. 3526, Insp. No. 2212. Essence of Jamaica Ginger (Peerless). Dolan Mercantile Company, Atchison. Peerless Essence of Jamaica Ginger is not clear—contains considerable insoluble matter; a mixture rather than an essence. The sample is composed largely of water—over 70 per cent. Contains capsicum.

Lab. No. 3527. Hanford's Balsam of Myrrh. Sample sent in to this laboratory by R. H. Wolfe, September 18, 1908. Contains wood alcohol.

Lab. No. 3534. Iodum-Miller. Anchor Suppository Company, Kansas City, Mo. Sample contains potassium iodide, glycerine, and 2.55 grams of iodine to 100 cc. of the preparation.

Lab. No. 3567, Insp. No. 2245. Unguentum Hydrargyri Nitratis. W. V. Ingham, Atchison, retailer. A dark brown, almost black, preparation. In appearance very much unlike the official product, which is of a citrine color.

Lab. No. 3571, Insp. No. 2249. Gelatin Coated Arsenic Pills, $\frac{1}{8}$ grain. Manufactured by Parke, Davis & Co., Detroit, Mich. Found to contain the amount of arsenic trioxide claimed. Old stock, but not deteriorated.

Lab. No. 3536, Insp. No. 2252. Precipitated Sulphur. Brown Drug Company, Alma. Has 43.8 per cent of ash, composed of calcium sulphate.

Lab. No. 3666. Cream of Tartar Substitute. Sample sent in by Doctor Crumbine. Found to be composed of acid calcium phosphate, calcium sulphate and cornstarch.

The death-rate from tuberculosis among the Chinese residents of the United States is 658.5, and among the Japanese 239 per 100,000 living, while among the white population of the country the rate is 173.

FOOD ANALYSIS.

(Corrections to the September and October Bulletins.)

SEPTEMBER BULLETIN.

Food Analysis No. XXIV, page 213, in the table headed "Table Syrups and Molasses," the eighth column from the left should read: "Ratio, soluble ash/insoluble ash."

Page 214, note at bottom of page should read, "No. 2066. Although the alkalinity of soluble ash is low, the malic acid, P_2O_5 , and per cent of solids were normal and the vinegar is passed."

On page 215, "No. 7552," it should be noted that the sample of vinegar was "Emrick's Glucose Vinegar" which the retail dealer was selling as or for cider vinegar.

Page 217, the third line should read, "Sucrose, 99.10 per cent of the dry material."

OCTOBER BULLETIN.

Food Analysis No. XXV, page 255, in table headed "Table Syrups and Molasses," the third column from the left should read, "Water by Abbé refractometer, 100-solids." The seventh column should read "Ratio, soluble ash/insoluble ash." The eighth and ninth columns (last part) should read, "Acid per 1 g. syrup."

The Treatment of Tuberculosis by the Administration of Mercury.

As described by Surgeon B. L. WRIGHT, U. S. N., U. S. Naval Hospital, Las Animas, Colo.

It is believed that mercury acts in two ways: First, as a tonic, increasing the vitality of the cellular elements of the various organs and tissues; and, second, that it renders the blood bacterioidal, producing antitoxin therein, which has a direct destructive action upon the tubercle bacillus.

This action of mercury is cumulative and lasting, and the immunity conferred by the early doses, plus the resistance to the disease developed by the increased cellular vitality, places the patient in such condition that, as treatment is continued, smaller doses are required to obtain the desired results.

If the patient continues to receive the same dose of mercury upon which he was first placed and began to improve, there will sooner or later be noticed: first, a rise in temperature; second, a

loss of weight; and should these signs be passed unnoticed it is probable that more or less serious damage would result; possibly an active general cellular degeneration, including the cellular elements of the blood, would occur, resulting in more or less permanent damage to the patient, if not a rapid decline and death.

It is only by close observation of each individual patient that the original and succeeding dosage can be determined. Never push the drug to the point of salivation.

Experience with this method of treatment has shown that the maximum dosage for the original series of injections cannot be carried beyond thirty injections without producing the conditions mentioned above, and that after a period of rest, upon resuming the injections, that the dose carried through the second series of injections must be reduced.

Since February, 1908, the treatment advocated has been by deep muscular injections of mercury. Experience has led us to modify in some degree the dosage first used and recommended. The first modification led toward larger doses, which for a short time produced much more rapid improvement, but which, when continued over any length of time, produced unfavorable results, and if persisted in would have probably resulted disastrously for the patients. This being promptly appreciated, the dose was reduced, and for the last six months the following routine has been carried out:

Begin with grain one-fifteenth of mercuric succinimide; give injections every other day; slowly increase the dose until a slight tenderness of the gums or a slight diarrhea is produced, then reduce the dose until these symptoms are overcome, and continue the injections until thirty have been given.

Then rest for two weeks; at the end of this interval of rest resume injections, using the dose used at the last previous injection, and continue upon this dose as long as the patient continues to improve, up to thirty injections; if any untoward symptoms arise or the patient does not appear to be doing well, reduce the dose, or alternate injections of mercury with injections of arsenious trioxide, grain one-thirtieth, and ferrous citrate, grain one-half, recommended by Harris, of Providence, R. I., for a short time

Each series of injections to consist of thirty, with two weeks of rest intervening. As treatment progresses smaller doses of mercury are required. At the end of one year's treatment a rest of from two to three months should be given, when, if the patient is not cured, treatment should be resumed.

As many cases of syphilis do not respond entirely to mercury, but do better when this drug is combined with arsenic, so many cases of tuberculosis do better when arsenic is added to the doses of mercury.

The above treatment, when properly carried out, first produces a fall in temperature, cessation of night sweats, increase in appetite, slowing of the pulse, gain in weight, a better feeling, and a rapid decrease in the physical signs; also a decrease in cough, and a more or less rapid decrease in the number of tubercle bacilli.

When the dose is too large, in addition to the symptoms of mercurialization, any one or all of the following may be observed: Rise in temperature, loss of weight, gastric disturbances, excessive increase in cough and expectoration, angina, or an ulcerative stomatitis. Any of the above symptoms being present calls for a reduced dose.

The initial injection, if the dose be grain one-fifth of mercurio succinimide or grain one-eighth of the bichloride, is almost invariably followed by a rise of from one-half to one and one-half degrees of temperature within three to five hours. It has often seemed that this feature may be of diagnostic value.

The Harmful Effects of Acetanilid, Antipyrin and Phenacetin.

Editorial, Journal American Medical Association, July 24, 1909.

One of the most interesting and, for physicians, most instructive bulletins published by the Bureau of Chemistry at Washington has recently been issued on "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin," by Dr. L. F. Kebler, with the collaboration of Drs. F. P. Morgan and Philip Rupp. For some time the *Journal* and a few other medical journals have been warning physicians of the dangers of the indiscriminate use of these valuable drugs; likewise a few of the better lay journals, among which *Collier's* and the *Ladies' Home Journal* take first rank, have carried the same warning to the public. The authors of this bulletin say, regarding the *raison d'être* of the investigation made by the government on this subject: "The purpose of the inquiry was not to depreciate in any way the value of these substances as medicinal agents, but rather to furnish information to the public which would enable them to understand that these remedies should be employed with caution in the absence of reliable medical advice. . . ." And further: "The harm done by acetanilid does not result from its proper use under the direction of the physician, but is mainly the

result of the promiscuous and indiscriminate use of the product by the laity."

With regard to the habit-producing qualities of acetanilid, antipyrin and acetphenetidin (phenacetin), the bulletin states that "the habit is acquired in most instances through the use of the remedy, without the supervision of the physician, for the relief of the minor aches and pains, especially headache." This fact was further emphasized by the statistics collected, which showed that "proprietary preparations were used in at least 50, or 44.6 per cent, of the 112 instances of the habitual use of acetanilid." As to the toxic qualities of acetanilid the following is instructive: Of the total number of cases of poisoning recorded, "more than one-third were reported during the year and a half following the advent of acetanilid as a medicinal agent in August, 1886. . . ." These cases were, doubtless, nearly all due to physicians' lack of knowledge regarding the toxic properties of what was then a new drug. As physicians learned of the danger, "the number of cases of poisoning fell off rapidly, and during the thirteen years following 1891 the number averaged but six annually."

Then came the innings of the nostrum exploiter, and "headache cures," "brain foods" and fake synthetic analgesics flooded the market and were indiscriminately used by the public. The result was a large number of cases of poisoning reported during this later period—since 1904. The "notable increase," both in the number of cases and in the number of deaths, is accounted for by the government investigators as follows: "This can be adequately explained by the fact that during recent years the control of acetanilid as a remedial agent has rapidly passed from the hands of the medical profession to those of the laity, owing largely to the advertising efforts of the manufacturers of proprietary medicines." The use of nostrums containing acetanilid has increased enormously during the past few years. We read, in fact, that, while proprietary preparations containing acetanilid are not mentioned in the reports from 1897 to 1904, inclusive, yet in 1905 proprietaries were responsible for 55.5 per cent of the cases of poisoning reported, in 1906 for 63.1 per cent, and in 1907 for no fewer than 87.5 per cent. The *Journal* has been accused of being too severe on the "headache powders" and similar preparations; this, too, not only by the proprietary interests, but occasionally by its friends. Certain it is that the *Journal* has never made such a scathing arraignment as that of this government document.

BULLETIN

OF THE

Kansas State Board of Health.

Published Monthly at the Office of the Secretary of the Board, Topeka, Kan.

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No. 12.

DECEMBER, 1909.

VOL. V.

It takes sixteen ounces net to make a pound in Kansas.

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VITAL STATISTICS

Reported to the Kansas Board of Health for November, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	
The State...total, November, 1908...	3
Allen	
Anderson	
Atchison	
Barber	
Barton	
Bourbon	
Brown	
Butler	
Chase	
Chautauqua	
Cherokee	
Cheyenne	
Clark	
Clay	
Cloud	
Coffey	
Comanche	
Cowley	
Crawford	
Decatur	
Dickinson	
Doniphan	
Douglas	
Edwards	
Elk	
Ellis	
Ellsworth	
Finney	
Ford	
Franklin	
Geary	
Gove	
Graham	
Grant	
Gray	
Greeley	
Greenwood	
Hamilton	
Harper	
Harvey	
Haskell	
Hodgeman	
Jackson	
Jefferson	
Jewell	
Johnson	
Kearny	
Kingman	
Kiowa	
Labette	
Lane	
Leavenworth	
Lincoln	
Linn	
Logan	
Lyon	
Marion	
Marshall	
McPherson	

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	1	0	0	0	2	0	0	0	0	0
Miami	1	1	9	4	0	0	1	0	0	0	0	0
Mitchell	0	0	0	0	0	0	1	0	0	0	0	0
Montgomery	2	0	11	2	8	0	2	0	0	0	0	0
Morris	0	0	1	0	4	0	0	0	0	0	0	0
†Morton												
Nemaha	4	2	1	0	0	0	1	0	0	0	0	0
Neosho	0	0	4	8	4	0	0	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	0	0	0	0	1	0
Osage	0	0	0	0	1	0	6	0	0	0	0	0
Osborne	0	0	0	0	0	0	4	0	0	0	0	0
†Ottawa												
Pawnee	1	1	1	1	0	0	1	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	20	0	0	0	0	0
Pratt	0	0	8	0	3	0	6	0	0	0	0	0
Rawlins	0	0	0	0	0	0	3	0	0	0	0	0
Reno	0	0	1	0	6	0	2	0	1	0	0	0
Republic	1	1	6	0	0	0	1	0	0	0	1	0
Rice	2	0	0	0	0	0	0	0	0	0	0	0
Riley	1	0	2	0	7	0	6	0	0	0	0	0
Rooks	0	0	0	0	0	0	0	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	0	0	3	2	0	0	0	0	0	0
Saline	0	0	1	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	2	0	2	0	0	0
Sedgwick	1	1	3	0	0	0	5	0	0	0	1	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	2	1	1	0	4	0	4	0	0	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
Smith	3	0	0	0	0	0	0	0	0	0	0	0
Stafford	0	0	0	0	2	0	2	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
†Stevens												
Sumner	3	3	6	2	2	0	0	0	9	0	0	0
Thomas	1	0	0	0	0	0	3	0	0	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	2	0	3	0	0	0
Wallace	0	0	0	0	3	0	0	0	0	0	0	0
Washington	2	2	1	0	4	1	1	0	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	0	0	1	0	0	0	0	0	2	0	0	0
Woodson	0	0	0	0	8	0	2	0	0	0	0	0
Wyandotte	1	0	0	0	6	0	5	0	0	0	0	0
Cities:												
Atchison	0	0	4	2	2	0	0	0	0	0	0	0
Coffeyville	1	1	4	2	1	0	0	0	0	0	0	0
Fort Scott	1	0	0	0	1	0	0	0	0	0	0	0
Kansas City	15	13	32	2	55	6	23	2	5	0	1	0
Leavenworth	1	1	8	0	16	0	2	0	0	0	0	0
Parsons	3	2	0	0	0	0	0	0	0	0	0	0
Pittsburg	1	1	0	0	8	2	3	1	0	0	0	0
Topeka	4	4	0	0	19	1	14	0	1	0	2	0
Wichita	2	1	15	5	7	1	4	0	0	0	0	0
State Institutions.	189	2	0	0	0	0	0	0	0	0	0	0

† No health officer.

Not a single health officer in Kansas was delinquent in monthly report this month. This shows a growing strength in the organization. Here's to the best sanitary force in the United States for 1910.

Attention is directed to the mortality shown in typhoid fever, 22.3 per cent, which indicates that a large number of cases are not reported until fatal results ensue, rather than unusual virulence.

DRUG ANALYSIS No. XXV.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The drug products which have been received from the inspectors during the past month have consisted of iodines, camphors, gentian tinctures and miscellaneous unofficial and official preparations.

Continuing his work on preparations containing ferments, Mr. James T. Bowles* of our department has examined, in addition to the preparations formerly reported, "Essence of Pepsin," "Elixir of Pepsin," "Elixir of Digestive Compound," "Elixir of Pepsin and Pancreatin Compound," "Pure Scale Pepsin" and "Lactated Pepsin Powder."

As in the former investigations, reported in the November BULLETIN, page 276, standard N. F. preparations were made of each liquid preparation represented. The peptic power of these standard liquids, when freshly made according to the National Formulary, is represented by A, B, C, D, E, and F. (G represents the digestive power of 0.2 per cent hydrochloric acid). For example, an amount of an elixir (B) or essence of pepsin (A) was taken which would represent 0.003 grams of pepsin, for the purpose of the tests. After two and one-half hours digestion (and standing in a narrow graduated cylinder) an amount of undigested albumin corresponding to 1 cc. remained. This implies, of course, that when an official elixir of pepsin was tested on the basis of the official test (see U. S. P., page 335) the amount of undigested albumin would measure not more than 1 cc. What has been said in reference to elixir of pepsin (A) applies also to the preparations corresponding to B, C, D and E. That is, the same method of standardization was followed. The table on next page shows results.

It seems to be evident that there are those among pharmacists who are not aware of the susceptibility to deterioration of preparations containing the digestive ferments. Some of these preparations are shorter lived than others, and it is our impression that pepsin in combination with bismuth has a comparatively short period of peptic activity. We have had some correspondence with manufacturers and dealers on this point, and it may not be out of place to refer to statements made by them. In some communications concerning these products, the statement is made that there

*Mr. Bowles discontinues his work at the University of Kansas, having been appointed as drug analyst with Meek & Co., New York city.

Lab. No.	NAME.	Acidity.	Color.	Amount of undigested albumin remaining.
2920	Essence of Pepsin.....	Higher than U. S. P..	Lightreddish yellow	14.0 cc.
2695	Elixir Pepsin and Pancreatin Compound.....	Higher than U. S. P..	Caramel and ppt...	30.0 cc.
2724	Elixir of Pepsin.....	Higher than U. S. P..	Caramel, some ppt.	29.0 cc.
2706	Peter's Essence of Pepsin.....	Higher than U. S. P..	Light caramel.....	32.0 cc.
2707	Elixir of Digestive Compound.....	Higher than U. S. P..	Caramel, some ppt..	28.0 cc.
2747	Pure Scale Pepsin.....	.....	Brown, semisolid mass.....	0.5 cc.
2702	L.....	.....	Light brown powder.	2.0 cc.
2637	L.....	.....	Dark brown powder.	2.0 cc.
(A)	E (N. F.).....	0.2 per cent.....	Light yellow.....	1.0 cc.
(B)	E in (N. F.).....	0.2 per cent.....	Caramel.....	1.0 cc.
(C)	E "Compound".....	0.2 per cent.....	Dark red.....	1.5 cc.
(D)	E and Bismuth †.....	0.2 per cent.....	Light yellow.....	1.5 cc.
(E)	E Bismuth and (N. F.).....	0.2 per cent.....	Light yellow.....	1.5 cc.
(F)	P..... (N. F.).....	0.2 per cent.....	Brown.....	1.0 cc.
(G)	Standard Lactated Pepsin ‡.....	0.2 per cent.....	Light.....	1.0 cc.
(H)	Dilute (HCl 0.2%).....	0.2 per cent.....	.....	28.0 cc.

* Corresponding to Elixir Pepsin and Pancreatin Compound.

† If in making this preparation the glycerite of bismuth be diluted with water according to the formula (125 cc. of the former to 200 cc. of the latter), there is a slight precipitation of bismuth. If to the water a very small quantity of tartaric acid be added, this precipitation is not only avoided but the activity of the pepsin is less affected, as will be seen from the accompanying table (D and E), as compared with A and B of the last report of similar preparations. The amount of undigested albumin there reported for A was 2.5 cc.; for B, 5.5 cc.

‡ Saccharated Pepsin, N. F.

is an evident carelessness among druggists in keeping for an undue length of time such preparations as these—preparations susceptible to deterioration. One manufacturer makes the statement that there are druggists in the United States who not only keep in stock products which have deteriorated, but which have been made according to a previous and obsolete Pharmacopœia. They complain that druggists do not seem to be sufficiently alert in conforming to the Pharmacopœia in the scrutiny of their stock and eliminating preparations which antedate the present Pharmacopœia. This manufacturer says that "we have purchased within a recent period specimens of pepsin which no longer conform to the present official requirements for pepsin." This he claims to be due to the fact that it was purchased before the eighth revision of the United States Pharmacopœia. He further adds: "Since organic products are the most important of materia medica and are now recognized to be of the utmost importance in the progress of medicine, surely it would be of great advantage if attention was given to the proper care of products liable to deterioration."

In transmitting to the Board this present report, it is our desire to add the comments of Prof. L. D. Havenhill, chief. In reporting the fifty-eight "tinctures of iodine" and other preparations, he makes the following summary: "About 74 per cent of these 'tinc-

tures of iodine' contain potassium iodide. The maximum quantity of iodine found, calculated for one liter of tincture, is 88 grams; the minimum, 12.7 grams. For potassium iodide, the figures are, respectively, 89 grams and 10.6 grams." These results seem to indicate that something besides the Pharmacopœia is necessary to secure uniformity in tincture of iodine.

About 56 per cent of the tinctures which contain potassium iodide are within 10 per cent of the official requirements in iodine strength.

The quality of "spirit (essence) of Peppermint" is not as satisfactory as could be desired. Twelve samples are reported; one-half are deficient in volatile oil and one-fourth contain water. Sample No. 3528 is clearly adulterated. The carton is labeled "Seelye's Pure Essence of Peppermint." A weak hydroalcoholic solution of oil of peppermint is in no sense "pure peppermint." The fact that the alcohol is declared, and the statement, "For Flatulency, Colic, Diarrhea," etc., together with the dose for adults and children, clearly indicate that it is intended to be used for a medicinal purpose.

No. 3652 is, by its label, clearly intended for a flavoring extract and meets the legal requirements. No. 3653 is labeled the same, is made by the same manufacturer and sold by the same retailer at the same price as No. 3652, yet it has practically three times its flavoring value.

It should be noted that the quality of "Tincture of Ginger" is extremely variable; several of the samples contain the required percentage of alcohol, but are conspicuously deficient in the characteristic ginger pungency. The presence of the pungent principle of capsicum is detected in two of the samples.

This report contains the results of the preliminary examination of ten samples of "Tincture of Calumba." Two samples of tincture prepared in the drug laboratory show, by assay, 56.5 cc. of absolute alcohol and 2.44 grams of extractive, and 56.6 cc. of absolute alcohol and 2.54 grains of extractive, respectively, per 100 cc. of tincture, and are much darker in color than the samples reported. The percentage of alcohol in these tinctures ranges from 7.76 cc. to 85.75 cc., while the extractives range from 0.49 grams to 1.336 grams per 100 cc. Samples Nos. 3657 and 3755 contain glycerin and are not included in the above limits. Tincture of calumba has been official for many years, but glycerin was never directed to be used in its preparation. The 1870 fluid extract of calumba, however, contained some glycerin.

The most uniform preparation so far examined is "Compound Tincture of Gentian."

The information supplied by the retailer, given in the column headed "Remarks," furnishes food for serious reflection.

TINCTURE OF IODINE

Lab. No.	Insp. No.	NAME.	City.	Gms. iodine in 100 cc. of tincture.	Potass. iodide in 100 cc. of tincture.
3551	2229	J. M. Bowen & Co.	Atchison	5.87	Absent.
3552	2228	W. I. Ellsworth	La Cygne	3.37	4.34
3553	2229	W. H. Bradwell		6.95	4.84
3554	2230	J. E. Rader	Fulton	7.60	6.02
3555	2231	Edward Dorsey		5.87	Absent.
3556	2232	L. A. Thuillier	Pleasanton	5.40	Absent.
3557	2233	E. W. Bartleson	"	4.90	Absent.
3558	2234	United Drug Co.	"	6.15	1.05
3559	2235	J. I. Sheets	Mound City	5.40	3.23
3560	2236	E. R. Van Ness		6.72	Absent.
3561	2237	A. H. King	Blue Mound	5.40	Absent.
3562	2238	Gooch & Edmondson	Mapleton	7.35	Absent.
3563	2239	Dr. S. E. Ball		6.10	Absent.
3564	2240	J. R. Tinkham	Newton	7.40	5.19
3565	2241	C	"	6.20	4.70
3566	2242	E	"	6.87	5.78
3567	2243	J	"	5.85	3.49
3568	2244	G	"	4.34	2.05
3569	2245	W		5.77	Trace.
3570	2246	D	Sedgewick	6.05	Absent.
3571	2247	F	Wellington	7.60	5.50
3572	2248	H	"	5.62	2.22
3573	2249	G	"	7.42	3.90
3574	2250	D	Harrison	5.55	Absent.
3575	2251	D	Peck	5.77	4.20
3576	2252	A	Wellington	4.37	5.65
3577	2253	H. K. Funk	Belle Plaine	5.62	3.74
3578	2254	L. L. Constant		4.10	Absent.
3579	2255	Earl Collins	Harper	3.42	5.30
3580	2256	Slack & Griggs		4.74	Absent.
3581	2257	Ferris Drug Co.	Argonia	7.67	3.56
3582	2258	J. E. Shaw	Mulyana	6.32	5.22
3583	2259	C. E. Palmer		7.00	5.07
3584	2260	J. R. Crump	Caldwell	6.40	4.78
3585	2261	L. T. Gabbart	"	6.30	6.64
3586	2262	N. D. Perry	"	7.57	5.39
3587	2263	L. F. Baugh	South Haven	5.15	3.12
3588	2264	George K. Crocker	Anthony	5.62	0.33
3589	2265	H. N. Kirkpatrick	"	3.30	Absent.
3590	2266	Erwin & Potter	"	6.50	5.23
3591	2267	Fred Olmstead	"	5.42	3.12
3592	2268	Kiowa Drug Co.	Kiowa	6.60	5.02
3593	2269	A. H. Carpenter & Son	Hazleton	7.52	5.63
3594	2270	O. E. Harman	Kiowa	5.22	Absent.
3595	2271	Syracuse Drug Co.	Syracuse	4.55	1.53
3596	2272	A. & A. Drug Co.	Garden City	7.77	6.11
3597	2273	T. C. Laughlin	"	1.27	Absent.
3598	2274	Renick Bros	"	5.97	6.88
3599	2275		"	7.17	5.70
3600	2276	Farnsworth Drug Co.	Holington	7.42	4.33
3601	2277	R. H. Hammond	Ness City	8.02	4.51
3602	2278	H. J. DeVries	Dighton	7.05	5.02
3603	2279	Round Drug Co.	"	5.07	3.21
3604	2280	Nicholson Drug Co.	Scott City	7.27	5.38
3605	2281	L. S. Boyer	"	6.10	3.39
3606	2282	S. W. Dutton	McCracken	6.45	3.98
3607	2283	Dr. L. D. Fitzgerald	La Crosse	5.75	.51
3608	2284	D. C. Eldridge	Wayne	5.62	4.23

* Contains undissolved potassium iodide.

ESSENCE OF PEPPERMINT.

Lab. No.	Insp. No.	NAME.	City.	Per cent added water.	Per cent oil.	Remarks.
3528	9088	A. B. Seelye.....	Abilene.....	83.00	2.10	Alcohol declared, 68 per cent; uncolored
3543	2221	M. Noll.....	Atchison....	18.1	4.03	Yellow..
3572	2250	J. F. Terras	Alma		9.49	Yellow.
3634	8339	Hoisington Drug Co..	Hoisington..		9.86	
3627	8332	W. C. Dougherty.....	Syracuse....		8.49	
3645	8350	J. Erwin Drug Co.....	Rush Center,		6.66	
3652	2267	S. Bradley.....	Agenda.....	28.7	3.00	Extract manufactured by McPike Drug Co.
3653	2268	S. Bradley.....	Agenda.....		9.82	Extract manufactured by McPike Drug Co.
3635	2295	Dr. Robert Algie.....	Linn.....	5.09	0.428	Made from Lilly's Fluid Peppermint; soluble.
3697	2307	R. W. Fairchild.....	Randall.....		10.62	Uncolored.
3699	2309	Red Cross Pharmacy..	Scottsville..		8.65	Yellow.
3712	2322	J. S. Fleming.....	Miltonville..		9.82	Light yellow.

SPIRIT OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Water added.	Per cent camphor.
3519	2205	L. O. Murphy.....	Willis.....		12.56
3521	2207	S. A. Norris Drug Co.....	Everest.....		10.47
3523	2209	C. C. McCreery.....	Netawaka		9.00
3524	2210	W. D. Beven	Muscotah.....		10.09
3535	2213	Dr. W. Jones.....	Huron		15.00
3536	2214	B. F. Coffin.....		24.19%	13.05
3566	2244	W. V. Ingham.....	Atchison.....		7.05
3582	2260	Dr. L. A. Walker.....	Harveyville.....		10.25
3640	8345	Dr. A. J. Swisher.....	Tribune.....		12.46
3654	2269	S. Bradley.....	Agenda.....		9.15
3672	2282	Dr. C. C. Stillman.....	Morganville.....		9.54
3673	2283	S. A. Mason & Son.....	Meredith.....		9.54
3675	2285	McCall Drug Co.	Palmer.....		10.39
3681	2291	Attwood Drug Co.....			10.39

TINCTURE OF CALUMBA.

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Residue.	Remarks.
3573	2251	J. F. Terras.....	Alma.....	85.75	0.490	Lemon yellow.
3580	2258	Dr. Jewett Drug Co.....	Eskridge....	32.25	1.136	Orange peel color.
3657	2272	E. Bechard.....	Clyde.....	45.00	15.390	Contains glycerin.
3676	2286	McCall Drug Co.....	Palmer.....	43.75	1.336	Dark red.
3687	2297	Dr. R. W. Maintz.....	Linn.....	38.50	0.496	Orange red.
3701	2311	E. T. Burgan.....	Scottsville..	43.40	0.736	Orange red.
3731	2341	D. A. Nywall.....	Scandia.....	37.75	1.166	Orange red.
3739	2349	M. G. Reed.....	Cuba.....	43.75	0.860	Yellow.
3755	2365	J. G. Trueblood.....	Glen Elder..	69.50	25.478	Contains glycerin.
3769	2379	Southside Drug Store....	Kirwin.....	7.75	1.806	Turbid; considerable sediment.

COMPOUND TINCTURE OF GENTIAN.

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Residue.	Remarks.
3578	2256	Dr. Jewett Drug Co.....	Eskridge....	54.00	3.340	No data.
3648	2263	T. E. Brandon	Clyde.....	50.75	4.906	Did not know how made.
3661	2276	Clyde Drug Co.....	Clyde.....	54.50	4.478	Made from fluid extract.
3677	2287	McCall Drug Co.....	Palmer.....	21.20	4.740	Did not know how made.
3684	2294	Algies Cash Drug Store...	Linn.....	45.25	2.844	Bought prepared.
3729	2339	D. A. Nywall.....	Scandia.....	41.20	3.882	From wholesaler.
3744	2354	Geo. M. McEckron.....	Concordia...	52.75	3.056	Made from fluid extract.
3753	2365	W. E. Keef.....	Glen Elder..	57.00	3.769	No data.
3765	2375	Owl Drug Co.....	Tipton.....	55.35	5.104	McPike Drug Co.
3788	2398	H. B. Leach	Alton.....	44.00	4.740	Made from fluid extract.
3807	2417	G. R. Thomason	Stockton....	48.20	3.806	Made from fluid extract.

TINCTURE OF GINGER.

Lab. No.	Insp. No.	NAME.	City.	Label.	Per cent alcohol.	Remarks.
3260	2146	J. W. Roberts.....	Grinnell	Tr. Ginger....	90.25	Not very pungent. Broken in transit. About 25% added water.
3261	2147	I. I. McIntosh.....	Oakley.....	Ex. Ja. Ginger.	92.50	
3271	2157	M. R. Smith	Russell	Eas. Ja. Ginger.	.....
3499	2185	Grand Union Tea Co..	Brooklyn	Ex. Ja. Ginger.	63.24	Alc. decl. 60%; contains cap- sicum.
3504	2190	C. L. Sherwood	Sabetha.....	Tr. Ginger....	88.00	
3508	2194	Parker Wilson Gro. Co. J. J. Taylor, retailer..	St. Joseph, Mo. Elwood	Jam. Ginger, Liberty Bell brand.....	60.00	
3525	2211	Gem Pharmacy.....				Contains cap- sicum.
3549	2227	J. M. Bowen.....	Muscotah.....	Tr. Ginger....	69.30	
3704	2314	G. N. Hartwell	Atchison.....	Tr. Ginger....	89.00	
3705	2315	L. H. Wapler	Jamestown....	Tr. Ginger....	90.25	Not very pun- gent; light yellow.
3714	2324	J. E. Janeway.....	Aurora	Tr. Ginger....	90.00	
3781	2391	Zimmerman Drug Co..	Haddam	Tr. Ginger....	88.60	
			Portis.....	Tr. Ginger....	94.50	Alc decl. 65%; contains insol. matter.
3785	2395	Baldwin & Co.....	Osborne	Con. Eas. Jam. Ginger	65.10	
3792	2402	H. J. Chapman.....	Speed.....	Ginger	93.50	
3841	2546	D. D. Hunt & Co.....	McCracken....	Eas Ja Ginger.	90.25	
3844	2549	Semple Drug Co.....	La Crosse.....	Tr. Ginger....	92.20	

Lab. No. 3173, Insp. No. 2089. Label, "Rich Lawn Whiskey, Vatted and Blended." Bottled by Edward Block Distilling and Distributing Company, Kansas City, Mo. Alcohol declared by manufacturer, 42.5 per cent. Alcohol found, 42.5 per cent. Artificial color.

Lab No. 3355, Insp. No. 2141. Label, "Prunets." Home Remedy and Supply Company. Compressed tablets with starch base.

Lab. No. 3509, Insp. No. 2195. Tincture of Arnica (Liberty

Bell Brand). Packed by Parker-Wilson Grocery Company. Alcohol declared, 25 per cent. Found to contain 19.4 per cent alcohol.

Lab. No. 3539, Insp. No. 2217. Label, "Cinchonidia Sulphate Pills." Manufactured by Parke, Davis & Co., Detroit. Old stock. Each pill declared to contain 3 grains cinchonidine sulphate. Passed.

Lab. No. 3540, Insp. No. 2218. Citrate of Caffeine Pills. T. J. Ritner, Atchison, retailer. Declared to contain 1 grain of caffeine citrate. Passed.

Lab. No. 3552, Insp. No. 2230. Po. Extract of Hyoscyamus. J. M. Bowen & Co., Atchison, retailers. Contains 0.068 per cent mydriatic alkaloids. About one-fourth U. S. P. strength.

Lab. No. 3553, Insp. No. 2231. Soluble Iron and Quinine Citrate. Powers & Weightman, Philadelphia, manufacturers. J. M. Bowen, Atchison, retailer. Found to contain 11.5 per cent quinine, and ferric citrate corresponding in amount to 13.01 per cent metallic iron. Passed.

Lab. No. 3557, Insp. No. 2235. Tr. Capsicum. A. W. Stevens, Atchison. Found to contain 87.4 per cent alcohol.

Lab. No. 3559, Insp. No. 2237. Extract of Belladonna Pills. Old stock. Declared to contain one-eighth grain of extract. Found to contain 0.00071 gm. of mydriatic alkaloid—equivalent to about five-eighths the declared strength.

Lab. No. 3560, Insp. No. 2238. Label, "Cinchonidia Sulphate Pills. Manufactured by W. H. Schieffelin, New York. Old stock. Declared to contain 2 grains cinchonidia sulphate. Found to contain 1.87 Gr.

Lab. No. 3561, Insp. No. 2239. Cera Alba. A. W. Stevens & Co., Atchison. Melting point, 56° – 82° ; specific gravity 0.892; saponification value, 8.48. Contains paraffin and nonether soluble wax. Adulterated.

Lab. No. 3565, Insp. No. 2243. Power's Extract of Aconite Leaves. Old stock. Manufactured by Lloyd Bros., Cincinnati, Ohio. W. V. Ingham, retailer. Found to contain 0.152 per cent aconitine. There is no official standard for this extract.

Lab. No. 3649, Insp. No. 2264. Zinc Sulphate. T. E. Brandon, Clyde, retailer. Sample has brown color. Contains iron.

Lab. No. 3655, Insp. No. 2270. Po. Extract of Aconite Root. Old stock. D. Bechard, Clyde, retailer. Found to contain 0.107 per cent of aconitine.

Lab. No. 3656, Insp. No. 2271. Elixir Potassium Bromide. E. Bechard, retailer. Four cubic centimeters of the preparation were

found to contain 0.58 gm. or 8.95 grains of potassium bromide. Uncolored.

Lab. No. 3660, Insp. No. 2275. Zinc Oxide Ointment. Not smooth, containing lumps of zinc oxide. The Pharmacopœia directs to strain if necessary. Sample contains 17.8 per cent zinc oxide.

Lab. No. 3664, Insp. No. 2279. "Hydrocyanic Acid, Dil." Old stock. Put up in transparent glass-stoppered bottle. Contains 1.2 Hydrocyanic acid. Below standard.

Lab. No. 3678, Insp. No. 2288. Citrine Ointment. McCall Drug Company, Palmer. Dark brown preparation. Faulty manufacture. Dispensed in tin box.

Lab. No. 3703, Insp. No. 2313. Iodine Ointment. Found to contain less than one-third amount of iodine of the official preparation. The deficiency in iodine content is disguised by the addition of coloring matter.

Lab. No. 3710, Insp. No. 2320. Citrine Ointment. Fleming Pharmacy, Miltonvale. Sample is not a citrine ointment. Has the appearance of a very poor resin cereate.

Lab. No. 3716, Insp. No. 2326. Alcohol. S. S. Yoder & Son, Haddam. Sample found to be of official strength.

Lab. No. 3720, Insp. No. 2330. Gentian Bitters Compound. Manufactured by Evans-Smith Company. Declared to contain 26 per cent alcohol. Found to contain 26 per cent alcohol. Residue from 100 cc., 0.2648 gm.

Lab. No. 3721, Insp. No. 2331. Citrine Ointment. Bixby & Potter, Republic. A chocolate-colored, semiliquid preparation. Was dispensed in tin box.

Lab. No. 3722, Insp. No. 2332. Citrine Ointment. Bixby & Potter, Republic. A brown or chocolate-colored preparation. Faulty manufacture. Dispensed in a tin box.

Lab. No. 3743, Insp. No. 2353. Tr. of Capsicum. Geo. M. Mo-Eckron, Concordia. Found to contain 86 per cent alcohol.

Lab. No. 3752, Insp. No. 2362. Lac Sulphur. Found 7.07 per cent ash (calcium sulphate). Adulterated.

Lab. No. 3763, Insp. No. 2373. Lac Sulphur. Examined for adulteration. Passed.

Lab. No. 3796, Insp. No. 2406. Alcohol. The Woodston Pharmacy, Woodston. Found to be of official strength.

Lab. No. 3802, Insp. No. 2412. Elixir Potassium Bromide. Smith Bros. Drug Company, Stockton. Four cubic centimeters of the preparation found to contain 9.92 grains potassium bromide. Colored with tincture cudbear.

CIDER VINEGAR, II.

By H. LOUIS JACKSON, Analyst for the State Board of Health.

In the BULLETIN for July, 1908, page 184, appears an article on "Cider Vinegar," in which the author attempted to point out to the small producer of vinegar some of the conditions commonly producing vinegar below the legal standards, even though apples were used in its manufacture, and even when it was not adulterated by the addition of water or other foreign substance.

It has been the experience of the laboratory that this article covers only part, and even a small part, of the field. Many of the samples of apple vinegar received show upon analysis that they have been adulterated with water. Sometimes hard water is the adulterant, sometimes it is rain water, but in each case the addition is discovered, and this adulteration is largely practiced by the large producers.

From correspondence and conversation with vinegar manufacturers it is thought the trouble arises from a lack of understanding of the new conditions brought about by the national and state pure food laws. Before the existence of such laws it had become well-nigh impossible to buy pure apple-cider vinegar. If the vinegar had actually been made from apple juice it was watered to suit the convenience of the vendor. Otherwise, it was not even the product of the apples, but was made from a dilute alcohol which was derived from grains, and the resulting colorless distilled vinegar was either sold colorless under the false name "white-wine vinegar," or it was colored with caramel in imitation of cider vinegar and sold as such. Still more gross adulterations will not be discussed in this article.

During this time there was one chief commercial standard for vinegars—that of its acetic-acid strength, which was expressed in grains, as 42-grain vinegar, 60-grain vinegar, etc., and which when divided by 7.6 approximated to the per cent by weight of acetic acid in the vinegar. Thus, a 42-grain vinegar would be about 5.5 per cent acetic acid, etc. A vinegar manufacturer would then make vinegar from apple juice, test it, and find that it was 5 per cent, 6 per cent, or perhaps 7 per cent, according to the sugar content of the apples used and the care taken in the two fermentations. If he were now selling 4-per-cent vinegar he would add water sufficient to bring his product down to 4 per cent or blend it

with a very low grade vinegar produced from the pumice pressings, practices well understood by practical vinegar men. The reasons for this condition of affairs were commercial competition, no adequate standards, general custom, and a quite general absence of any ideas about *purity* in food products. The manufacturer can really not be blamed; he was merely selling what the public of that day demanded. Then came investigations, exposures, a new, enlightened public sentiment, and, as a natural result, pure food laws and standards. The manufacturer did not at once realize the significance of it all, and he cannot be blamed too severely either.

It is just the purpose of this article to try and point out the significance of these changes to the manufacturer. His problem to-day is not to produce 4-per-cent cider vinegar or 5-per-cent vinegar, but to produce *pure cider vinegar and sell it just as it is naturally produced*. Pure cider vinegar is not going to be just the same when made in different years by different manufacturers, from different apples, in different states of maturity, from different farms.

One vinegar will be 5.2 per cent acid, 2.7 per cent total solids, 0.42 per cent ash; another will be 4.5 per cent acid, 3.14 per cent total solids, 0.41 per cent ash; another will be 5.6 per cent acid, 2.04 per cent total solids, 0.46 per cent ash; and so on.

Under the pure-food law these must be sold as they are naturally obtained, without adding anything to the vinegar or taking anything away from it.

The explanation for this is as follows: In the *Topeka State Journal* for November 28, 1907, appeared the food standards adopted by the State Board of Health and approved by the governor. There we find under—

G. VINEGAR.

“1. Vinegar, cider vinegar, apple vinegar, is the product made by the alcoholic and subsequent acetous fermentations of the juice of apples, is lævo-rotary, and contains not less than four (4) grams of acetic acid, not less than one and six-tenths (1.6) grams of apple solids, of which not more than fifty (50) per cent are reducing sugars, and not less than twenty five hundredths (0.25) gram of apple ash in one hundred (100) cubic centimeters (20 degrees C.) of the vinegar, contains not less than ten (10) milligrams of phosphoric acid (P_2O_5), and requires not less than thirty (30) cubic centimeters of decinormal acid to neutralize its alkalinity.”

(2). Wine vinegar, (3) malt vinegar, (4) sugar vinegar, (5) glucose vinegar, (6) spirit vinegar, distilled vinegar, are also defined, and it is seen that they must be produced from the sources indicated by the names.

Reading again the standard for or definition of vinegar, it is seen that vinegar, cider vinegar, apple vinegar, are *one and the same thing*. It makes no difference whether a product is labeled "Pure Apple Cider Vinegar," "Golden Sheen Vinegar," "Silver Bright Vinegar," "La Ca Vinegar," or any other peculiar combination of words or letters, or simply "Vinegar," the product must be the same in all cases and is defined in "1. Vinegar."

In the definition, "1. Vinegar," no addition of water or commercial acetic acid or anything else is mentioned; consequently, if anything is added to vinegar or taken away from it it is adulterated. The numerical values mentioned in "1. Vinegar" are all *low* values, in order that no vinegar which is pure but made from inferior apples will be excluded. As an actual fact, this laboratory knows not a single instance in which a pure cider vinegar has had all its values as low as these standards. If a vinegar has all its values as low as the standards suspicion is aroused at once, and sophistication by various methods well known to the vinegar manufacturer is indicated. At that point the analyst with suspicions aroused begins to apply other tests not hinted at in the standards and finds he can still prove the vinegar is adulterated despite the fact that it may be just above the standards. It is not claimed that all the above additions are usually made to a vinegar, but different ones are attempted at different times. If the chemist were confined to two or three tests he might fail to detect these vinegars, adulterated in various ways, but when he has test after test to apply, it becomes extremely difficult for an adulterated vinegar to run the gauntlet of national, state, municipal, and rival firms' chemists and not be discovered sooner or later. Thereupon follows trouble, unfavorable advertising, fines, and just the opportunity a rival is waiting for to cut out a portion of the trade and appropriate it to himself.

The standards are based upon the values obtained for analyzing known pure cider vinegar; consequently, when vinegar is watered or otherwise changed and adulterated it fails to pass the standards, and even when it does pass them its abnormal analytical values bring about its downfall. The simple problem for the present-day vinegar manufacturer is to make vinegar from clean, sound, ripe apples and sell it just as nature and his vinegar generator produce it.

"No nation has died at the bottom, among the toilers; all nations that have died have died at the top, among the spoilers."—*Dr. Edward A. Steiner.*

A Sewage-disposal Plant for a Single Residence.

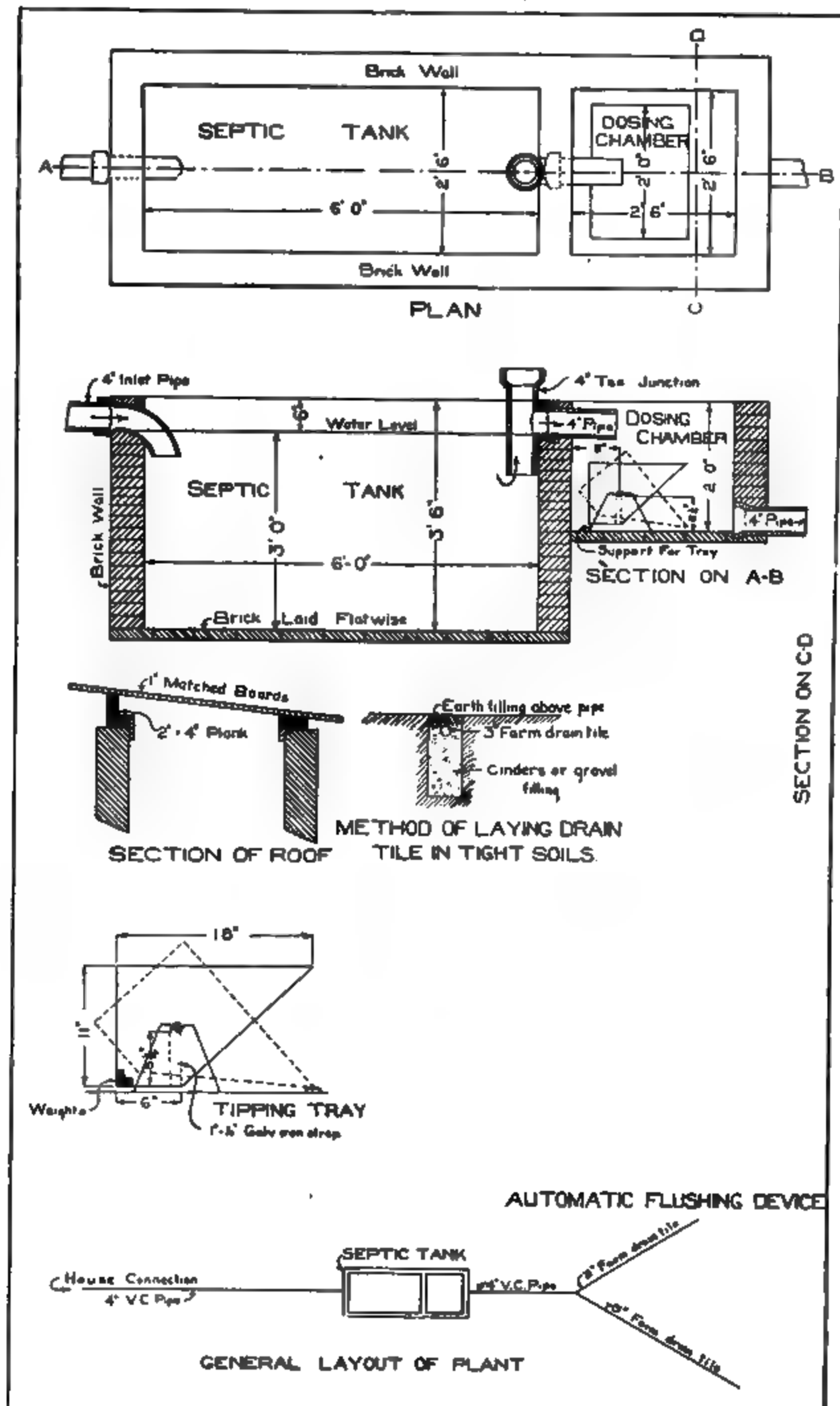
By WM. C. HOAD, Engineer, State Board of Health.

In the BULLETIN for May, 1908, was published a description of a small sewage-disposal plant suitable for the use of isolated residences having a water supply, but not having access to a public sewer. The demand for this issue of the BULLETIN has been such that the supply is now exhausted. Inasmuch as requests are still coming in, however, for information concerning this residential sewage-disposal plant, it is deemed desirable to publish the plans and description again in this issue. Advantage is taken of the opportunity afforded by the republication to expand slightly the statement of the function and the limitations of the plan described, and to add somewhat to the specifications for the construction of the plant.

The disposal plant shown in the drawing on page 304 is not a cesspool, but is a complete, though small, sewage-purification plant, designed to treat the domestic wastes coming from the kitchen sink, bathroom and laundry of an ordinary residence provided with a water-supply system. Garbage and rubbish of all kinds should be excluded, and no roof leaders or cistern overflows should be connected with the plant.

The purification processes involved consist of preliminary treatment in a septic tank, followed by oxidation in the open surface layers of porous soil, through which the sewage is distributed by means of a dosing chamber and a system of subsurface irrigation pipes. The sewage first enters the septic tank, where the suspended organic matter is held until it is disintegrated by the intense bacterial activity of the tank. The clarified effluent then flows out into the dosing chamber, where by means of either the tipping tray or the automatic siphon (depending on which device is used) it is flushed out into the distribution pipes of the subsurface irrigation system. Here the sewage trickles out through the open joints of the pipes into the surrounding soil, where it is further acted upon by the oxidizing bacteria of the upper soil layers, and where it finally becomes food material for the plant life of the lawn or field.

The drawing shows a tank built of brickwork, though it could be constructed of either stone masonry or concrete just as well. The bricks should be laid in a rich cement mortar, care being taken



Construction details of sewage-disposal plant for isolated residences.

to fill all the vertical as well as the horizontal joints. The cross wall should be bonded in with the side walls in every alternate course. After the mortar of the brickwork has set, the dirt taken from the excavation should be tamped in around the sides, the excess material being used to bank up around the tank to prevent the entrance of surface water. The inlet and outlet pipes should be carefully set at the exact elevations indicated in the drawing, and firmly cemented in place. Finally, the tank should be carefully plastered on the inside with a one-half inch coat of rich Portland cement mortar.

The tipping tray shown in the dosing chamber can be made by any tinner, while the automatic flushing siphon, which may be used instead of the tipping tray if a somewhat better and more permanent form of construction is desired, can be secured from the manufacturers of automatic flushing appliances. Whether the siphon or the tipping tray is used for flushing the sewage out into the distribution pipes, the device should be tested after being set in position in order to make sure that it is in good working condition.

The connection from the house to the septic tank should be of four-inch vitrified clay pipe, with bell-and-spigot joints, carefully laid to a uniform grade, and having the joints well filled with cement mortar. This careful cementing of the joints is especially important in case the house connection is carried through a grove of trees, since if any of the joints are left open the tree roots may grow in through them and quickly fill up the pipe.

The pipes for the distribution system should be sound, hard-burned three-inch agricultural draitiles, in one-foot lengths. They should be laid at a depth of from a foot to eighteen inches below the surface of the ground, and should be laid on a grade of 3 inches in 100 feet. This matter of grade or "fall" should receive careful attention, since if the grade is too great the lower end of the pipe will receive more than its fair proportion of sewage, while if the grade is too small the upper end will receive too much. The length of this three-inch pipe should be proportioned according to the nature of the soil. If the soil is quite open and sandy approximately 200 feet will be sufficient for the sewage from an ordinary residence; while if the soil is of a closer texture 300 or 400 feet or even more will be necessary. The system is not well adapted to very tight and retentive clay soils, though it has been used successfully for a time in soils of this character. A desirable, though somewhat costly modification that has been successfully used in

tight soils consists in digging the trench about four feet deep, filling the lower three feet or so with cinders or gravel, and then laying the three-inch distribution tiles at the surface of this porous filling material and covering them with about a foot of earth. The total length of distribution tiles deemed necessary for any particular installation may be laid in one or more single lines extending out from the dosing chamber, or a single line may be divided into two or more branches, as indicated in the drawing. In case more than a single line is used great care should be taken to see that each line receives its fair share of the septic-tank effluent. Where the natural slope of the ground is steeper than the grade required by the distribution lines, these may be zigzagged down the hill.

A plain board roof can be built over the tank, as shown in the drawing, two trapdoors being left by means of which the interior of the tank and dosing chamber may be inspected. Or, if a more permanent form of construction is desired, the walls of the tank may be made thicker and the whole structure arched over and covered with earth. In this case, however, at least one and preferably two large manholes should be left, through which the operation of the tank and dosing chamber may be inspected, and by means of which the tank may be cleaned out. Upon the whole, the wooden roof construction is better, as in this case the roof can be lifted off bodily when it becomes necessary to get into the tank.

It should be the expectation that once in from one to four or five years the tank will require cleaning out, the frequency depending largely upon the character of the sewage. The sludge taking from the tank at these cleaning periods will be found to be relatively small in amount, and may be best disposed of by running it into a trench or furrow and covering it over with soil. This cleaning out should be done in the fall of the year, if possible, as at this season the sludge in the tank possesses less odor and is less objectionable to handle than at other times.

It should also be expected that every few years the distribution tiles will have to be taken up and relaid in a new trench a few feet away from their former position. This is simply because there is a gradual choking up of the open spaces in the soil, with the result that the soil immediately adjacent to the pipes may become waterlogged and sour.

Particularly for those parts of the state where the rainfall is such that the water of the sewage, as well as its fertilizing constituents, has an appreciable value, the disposal scheme outlined above may have a considerable economic as well as important san-

itary value. It is quite possible by this method to maintain in the dryest region a large, well-fertilized and well-watered lawn. The process should be carried on entirely without odor, though, of course, the septic tank should be located at some little distance from the house—say a hundred feet or more, if possible. Especially, the disposal plant should not be near any open well which is used as a source of water supply.

Like all plants which are designed to be automatic in their action, this one requires some attention. It should be inspected occasionally, simply to see that none of the pipes have become stopped and that the dosing device is working properly, if for nothing else. If carefully constructed and properly looked after it will give good and satisfactory service.

Sixth Annual Conference of Health Officers.

The sixth annual conference of State, County and Municipal Health Officers was held in Representative Hall, Topeka, December 8, 1909.

The health officers who were not present missed an interesting and instructive session and a most enjoyable fraternal and social occasion.

It was suggested that the organization be made permanent, under the proposed name of the Kansas State Association of Public Health Officers, with the object of obtaining more effective coöperation for the energetic enforcement of all public-health measures.

To effect this a temporary organization was perfected and the following officers elected: President, Dr. E. C. Reynolds, Iola, Allen county; vice president, Dr. C. T. Ralls, Winfield, Cowley county; secretary, Dr. J. J. Sippy, Belle Plaine, Sumner county; treasurer, Dr. C. G. Edgerton, Ness City, Ness county.

A committee to draft a constitution and by-laws, composed of Dr. F. A. Forney, Hutchinson, Reno county, Dr. G. P. Marner, Marion, Marion county, and Dr. W. H. Winterbotham, of Salina, Saline county, was appointed.

The permanent organization will be effected at the next annual meeting, to be held in June, at the time and place of the annual meeting of the State Board of Health. It is desired that every health officer become a working member of this new and, we trust, most useful organization.

The following program was rendered:

9:30 A. M.—Meeting called to order.

President Charles H. Lerrigo, M. D.

Registration of Tuberculosis,

F. P. Slayton, M. D., city health officer, Wichita.

Discussion led by C. T. Ralls, M. D., health officer Cowley county.

The Work of the Health Officer,

E. C. Reynolds, M. D., health officer Allen county.

Discussion led by J. C. Montgomery, M. D., health officer Riley county.

1:30 P. M.—The Pathology and Diagnosis of Acute Anterior Poliomyelitis,

A. L. Skoog, M. D., University School of Medicine, Rosedale.

Discussion led by Clay E. Coburn, M. D., member and vice president State Board of Health.

Free Distribution of Diphtheretic Antitoxin,

D. R. Stoner, M. D., health officer Gove county.

Discussion led by A. W. Cormack, M. D., health officer Wilson county.

Tuberculosis in Animals Used for Food Products,

Doctor DeWolf, federal inspector, Topeka.

Discussion led by Dr. G. P. Marner, health officer, Marion county.

Hotel Inspections,

W. J. V. Deacon, statistician State Board of Health, assistant chief inspector.

Discussion led by C. Granville-Edgerton, M. D., health officer Ness county.

Question box on the "Difficulties and Problems of the Job,"

Conducted by S. J. Crumbine, M. D., secretary State Board of Health.

7:20 P. M.—The Investigation of a Typhoid Epidemic,

V. C. Eddy, M. D., Colby, member State Board of Health.

Discussion led by W. O. Thompson, M. D., Dodge City, member State Board of Health.

Water Pollution: Its Dangers, and How to Prevent It,

Prof. William C. Hoad, engineer State Board of Health.

Discussion led by J. J. Sippy, M. D., health officer Sumner county.

General discussion and adjournment.

Among the many letters received by the Department of Health from laymen, the following causes are given for the epidemic of "infantile paralysis": "Green paint on house." "Heavy rains, making bad well water." The use of tobacco by the father of the child." "Electricity in storms."

Decreased Death Rate Result of Teaching Sanitation in Public Schools of Glasgow, Scotland.

By R. E. McDONNELL, Kansas City, Mo.

Almost every important city in Europe or America has some distinguishing features or industries for which it is specially noted. In visiting Glasgow, Scotland, the people were proud of the fact that they have the undisputed reputation of being the best-governed municipality in the world. To learn the cause of this enviable reputation required a two-weeks visit, and on the last day the cause was discovered. The municipal improvements were models and were the object of special interest and investigation by many foreign visitors. Their abundant supply of pure water is brought from Loch Katryn, made famous by Scott's "Lady of the Lake." At the time the water supply was first used it was dedicated by the late Queen Victoria with the remark that "it was the finest that nature and the genius of man could provide."

The municipal buildings are of such interest as to be the objects of visits similar to famous art galleries. Their interior decoration presents an interesting illustration of the growth of the municipality from a village to a city of a million people.

The street-cleaning department cleaned the streets and kept them clean, a most unusual thing in any large city. Repairs to the streets were quickly and economically made by the municipal-repair department, instead of by the contract system.

The garbage-incinerating plant, centrally located, was efficiently operated.

The municipally owned and operated street-car system was in striking contrast to the privately owned in other cities. Seats for all passengers; clean, comfortable cars; quick service, polite and obliging conductors, with one-, two- and three-cent fares, depending on distances—this was the result of their fourteen years of municipal ownership of this important public utility. "Can you make it pay and give such good service?" the manager was asked. His reply was that it did pay, and from the revenues alone the lines had been extended in all directions to adjoining suburban towns. The old cars had been replaced with new; all advertisements inside and outside the cars had been discontinued, because the revenue from advertisements was not needed.

The sewage-purification works have for years been recognized

as among the best in Europe, and their successful treatment of the sewage of the city has transformed the river Clyde from a foul, sluggish stream to its former purity.

The grounds surrounding the sewage-purification works resembled more a beautiful park than a sewage-treating works. It was here the discovery was made why Glasgow was the best-governed city in the world. Classes from the schools were visiting the works. Boys of all ages from the ward schools, high schools and universities regularly visit, inspect, and study not only the sewage department but every other department of public service. The superintendent in charge gives demonstrations and instruction to all these visitors, and it has been found that when these boys arrive at a voting age they have a good knowledge of the needs of a municipality and are familiar with the inner workings of every public utility. As a result of this early education the death rate from preventable diseases is far below other cities, the municipal improvements are standards for high efficiency, and political corruption is unknown.

What Kansas will be Thankful for.

"Kansas will have a twenty-four-hour state-wide day of thanksgiving for extraordinary progress in civic advancement; an unprecedented diminution of crime; a complete triumph of the law over the saloon in every county, town and village in the state; an unexpected increase in attendance at every educational institution within her borders; advancement to first place among the states of the Union in material wealth per capita; a marvelous increase in the volume of business; the cheerful and ready acceptance of sanitary regulations that have reduced the death rate to the minimum of America; for development in industrial activities beyond the capacity of our present population to handle; for the practically complete evacuation of 50 per cent of our jails and more than 60 per cent of our poorhouses; for an increase of more than \$20,000,000 in our state banks alone, and for an increase of more than \$15,000,000 in the value of three farm products—wheat, corn and oats.

W. R. STUBBS, Governor."

Perhaps in no other way is the prosperity of the state so reflected as in the great amount of municipal improvement going on all over the state. Erie and Sabetha are the latest to vote for waterworks and sewerage.

Pellagra in Kansas?

The November issue of *McClure's Magazine* contains an article on "Pellagra, the Medical Mystery of To-day," by Marion Hamilton Carter. The article is, in the main, an able review of the history of the disease in Europe and America, with a digest of the views held by the scientists as to its cause, distribution and progress.

In the statistical tables Kansas is credited with ten cases, but their location in the state is not given. We desire to state that there are no known cases in Kansas at the present time, within the knowledge of the State Department of Health, nor has inquiry from the reputed source of information from which these statistics were gathered given us any clue of their whereabouts, except the one supposed case that died at the State Epileptic Hospital, at Parsons, in March of this year, and which Doctor Perry, the superintendent, now believes to have been pellagra.

If "spoiled corn" is the cause of this disease, then it will never gain a foothold in Kansas. In no other spot on earth does Indian maize, or corn, reach such perfection as it does in the Middle Western states, and particularly in Kansas; the temperature, soil and moisture are ideal, and the seasons of sufficient length to fully mature and cure the crop, and the comparatively dry sunny days of fall and winter assure a continuance of its excellent conditions. These, with the additional safeguard of a rigidly enforced pure-food law, under which the products of mills are systematically inspected, give all reasonable assurance that this dread disease will remain unknown in Kansas.

Moreover, if the scientists are correct in their suspicion that liquor made from damaged or moldy corn may produce the disease, then the prohibitory law of Kansas has justified itself once more in safeguarding the public health as well as the morals of its citizenship.

Physicians who are not reporting their cases of tuberculosis, as required by the special law passed by the recent legislature, are not only violating the laws of the state but are neglecting or refusing to coöperate in a measure for tuberculosis control which is at once the most wise and promises the best results of any law ever passed by this or any other state. Better line up!

Four Thousand Consumptives Starve Yearly.

Cruel and inhuman practices are alleged in a statement given out to-day by the National Association for the Study and Prevention of Tuberculosis against the eastern doctors who persist in sending dying cases of consumption to the Southwest.

Fully 7180 persons hopelessly diseased with tuberculosis annually come to die in the states of California, Arizona, New Mexico, Texas and Colorado, most of them by order of their physicians. This statement, which is based upon the testimony of well-known experts, and all available statistics, shows that at least 50 per cent of those who go to the Southwest every year for their health are so far advanced in their disease that they cannot hope for a cure in any climate, under any circumstances. More than this, at least 60 per cent of these advanced cases are so poor that they have not sufficient means to provide for the proper necessities of life, which means that 4315 consumptives are either starved to death or forced to accept charitable relief every year.

It is not an uncommon thing, the National Association declares, for whole families, who can hardly eke out a living in the East, to migrate to the West in the hope of saving the life of some member of the family. In most instances, the abject poverty of such cases forces them to beg, or to live on a very low level. Often consumptives who cannot afford the proper traveling accommodations are found dead on the trains before reaching their destination. The resources of almost every charitable organization in the Southwest are drained every year to care for cases which would be self-supporting in their eastern homes.

It costs, on an average, at least fifty dollars per month for the support of a consumptive in the Southwest, including some medical attention. The National Association strongly urges no one to go to this section who has not sufficient funds to care for himself at least one year, in addition to what his family might require of him during this time. It is also urged that no persons who are far advanced with tuberculosis go to so distant a climate.

Consumption can be cured or arrested in any section of the United States, and the percentage of cures in the East and the West is nearly the same. Any physician, therefore, who sends a person to the Southwest without sufficient funds, or in an advanced or dying stage of the disease, is guilty of cruelty to his patient.

Renewed efforts are being made to stop this practice, and to encourage the building of small local hospitals in every city and town of the country. Attempts are also being made in Southern California and in Texas to exclude indigent consumptives or to send them back to the East.

Lack of Hospital Beds Costs Country Over a Billion Dollars.

Sixteen states and territories of the United States provide no place where the poor consumptive can be treated, except in jails and insane asylums. This statement, together with another, to the effect that not one in thirty of the victims of consumption who want to get into hospitals can find a place there, a fact which will mean a loss to the country of \$1,275,000,000, is made by the National Association for the Study and Prevention of Tuberculosis in a bulletin issued to-day.

The National Association states that there are in the United States at least 300,000 consumptives who are so poor that they cannot pay for proper medical treatment in tuberculosis sanatoria and hospitals. Some of them can pay small amounts a week for their maintenance, but the great majority of them cannot pay anything. For this large class of patients the entire country has provided only 10,000 beds for the free treatment of tuberculosis. In Alabama, Arkansas, Idaho, Kansas, Mississippi, Montana, Nevada, North Dakota, Oklahoma, Oregon, Philippine Islands, South Dakota, Texas, Utah, West Virginia and Wyoming there is no place where the consumptive without means can be treated but in jails or insane asylums, and in most cases he will get no treatment there. Sixteen other states provide less than fifty beds each for poor consumptives. In only two states, Massachusetts and New York, have beds for needy tuberculosis patients been provided, so that at least one in ten may find a place for treatment. In many of the other states not one in fifty of the destitute consumptives can find a bed in a hospital or sanatorium.

It costs on an average about \$250 to cure an incipient consumptive or to care for an advanced case until death. If he is left in destitute circumstances without proper attention he will surely infect with his disease at least two other persons, and possibly many more. Considering that the average life is worth to society in dollars and cents about \$1500, the net loss which would accrue to a community by not treating its poor consumptives in proper institutions would be for each case, including those who are unnecessarily infected, at the very lowest figure, \$4250. On this

basis, if the poor consumptives in the United States who are now sick were segregated from their families, and either kept in institutions until they died, or else cured of their disease, the saving to the country would be the enormous sum of \$1,275,000,000.

Consumption is primarily a poor man's disease. Dr. Woods Hutchinson, of New York city, says: "Roughly speaking, the incipient tuberculous patient can buy as many chances of fresh air and cure as he has money." The percentage of deaths from consumption among the poor is 100 per cent higher than among the well-to-do and the rich. Sixty-five per cent of the consumptives in the United States are too poor to provide proper means for treatment. They must either be placed in a sanatorium or a hospital where they can be cured of their disease, and where they will be removed from the possibility of infecting other members of their families, or the loss resulting from the neglect to care for these poor consumptives will be twice or three times as great as would be the case if they were properly housed in institutions.

The National Association for the Study and Prevention of Tuberculosis declares that if every county or township should erect an institution for the treatment of indigent cases of consumption, this disease would be wiped out in a few years.

Pleasures and Hopes of the Health Officer.

From the British Medical Health Officer.

Such was the theme which Dr. Charles V. Chapin, the medical officer of health of Providence, R. I., discoursed upon before a recent meeting of the American Medical Association. Incidentally he related some of the duties of a health officer on the other side of the Atlantic, and in some respects these differ curiously from those of his colleagues on this side. To abate nuisances, to isolate contagious diseases promptly, to examine school children, to license hogs, to listen patiently to complaints, to diagnose doubtful cases, to record births and deaths, to distribute milk for babies, to vaccinate, to kill mosquitos, to give out antitoxin, to inspect baby farms, to examine dogs' brains, to distribute circulars, to make blood tests, to back up the family physicians, to keep the reporters good-natured, and to answer fool questions are all in the day's work of the American health officer, and appear to be included in his pleasures. Health officers in this country will agree with Doctor Chapin that half the pleasure in one's work is in keeping abreast of the times, in taking the best journals, in keeping in touch with

the latest discoveries and learning what the scientific men of all lands are doing. He considered that the greatest pleasure which a health officer could possibly have was to do something to advance his profession, and he pointed out that even the least ambitious could observe facts and record them faithfully.

Doctor Chapin enumerated the hopes of the health officer in racy language which is peculiarly his own. "We hope," he says, "for the establishment of a national bureau of health, and we hope it will not be planned by clergymen, or college presidents, or politicians. We hope that some time the public health reports will be filled with useful information. We hope that every health officer will be trained for his work, that he will receive a reasonable reward for his services, and that the pay for saving a child's life with antitoxin will at least equal that received by a plumber for mending a leaky pipe, and that for managing a yellow-fever outbreak a man may receive as much per week as a catcher on a baseball nine. We hope some day to issue a permit for the burial of the last doctor who thinks he can diagnose diphtheria and smallpox with his nose. We hope for the day when superstition shall have been banished from therapeutics and when the newspapers shall have forgotten the sewer-gas bogey. We cannot expect that figures will ever cease to lie, but we may hope that vital statisticians will."

We do not think that we shall lay ourselves open to criticism if we assert that the aspirations of British health officers are singularly like those which Doctor Chapin so graphically attributes to his immediate colleagues.

The Value of Fats in Diet.

From The Lancet.

The tendency of to-day in many quarters is to exclude as much as possible the fatty portions of animal foods. Pieces of fat are carefully cut off the slice of ham, mutton, or beef, and only the lean parts are eaten. Indeed, for some unaccountable reason the eating of fat is regarded by not a few as positively vulgar. Such an attitude, of course, displays an ignorance of physiological facts. Cold feet, hands, fingers, ears, and chilblains would in many instances be avoided under a generous diet of fatty food. A digestible fat favors nutrition considerably; it spares much waste of the tissue-forming elements of food. When lean meat alone is given large quantities are required in order that nutrition and waste may balance one another, but if fat be added the demand for flesh is

less. Besides, therefore, giving an advantage in regard to making good the repair of the body, the use of fat is economical from the point of view of pounds, shillings, and pence. The absorption of large quantities of fatless meat, again, tends to overload the blood with nitrogenous waste products. In anemic persons the partaking of an easily digested fat is commonly followed by the best results, nutrition is greatly improved, and the condition of the blood is often restored to normal. It is well known, again, that easily absorbed fats, such as butter, cream, cod-liver oil, bacon fat, and dripping, are especially valuable to sufferers from wasting diseases. The introduction of the old-fashioned and well-prepared suet pudding into the diet is in perfect accordance with scientific teaching, and from the dietetic point of view, especially in the feeding of young, growing people, does probably a really beneficial service to the country. The assumed aversion to fat on the part of a great many people is silly and mischievous, for there can be little doubt that a reasonable proportion of fat in the diet is calculated to preserve the standard of health. Cases of true repugnance or intolerance do, of course, exist, but on the whole they are rare.

Tuberculosis Notes.

In the prisons of Bengal, India, tuberculosis kills about two prisoners in every hundred.

According to tests made recently on 728 children from the tenement-house section of New York city, 28 per cent. showed signs of tuberculosis either of the joints, glands or lungs.

National anti-tuberculosis associations have recently been formed in Russia and Greece. Similar organizations are now in existence in the United States, England, Germany, Sweden, Switzerland, Hungary, Italy and France.

According to United States consular reports, the tuberculosis death rate is twice as large in Syria and Turkey as it is in the United States. There is only one special hospital for this disease in the entire Ottoman Empire.

Statistics published by the *Imperial Gazette* show that in recent years there has been a steady decrease in the number of deaths in Germany from tuberculosis, and especially from tuberculosis of the lungs. In urban centers the death rate per 100,000 fell from 226.6 in 1903 to 192.15 in 1908.

For 1000 active troops in the armies of the great world powers, the following figures show the percentage of cases of pulmonary tuberculosis: United States, 4.72; Great Britain and colonies, 2.4; France, 5.3; Germany, 1.5; Austria, 1.0; and Russia, 2.7. The percentage in the general population is much larger.

Miscellaneous Notes.

You cannot fight science with prejudice.

Atoxyl contains about 26 per cent arsenic.

This is the beginning of the age of prevention.

"Prevention is better than cure, and far cheaper."—*John Locke*.

"The moral of cleanliness cannot be expressed in dollars and cents."—*Richards*.

How many physicians know what constitutes an efficient disinfection after an infectious disease?

The assessors reported 23,863 births for Kansas for 1908. Health officers reported about half that number.

In the past six years the State Board of Health has grown from a working force of two to one of thirty persons.

A case of glanders in a young man occurred in Harper county recently. He had been treating a horse having the disease.

A Reno county woman writes that tuberculosis and insanity are caused by "rats and puffs" in women's hair, and demands an investigation.

Kansas laws require a thorough disinfection upon the termination of cases of typhoid fever and consumption. Are you seeing that this is done?

If you are in doubt as to whether or not the case in hand is diphtheria, give the patient and the public the benefit of the doubt, and give antitoxin.

Eleven hotels in Kansas prefer to close their doors than to keep clean. Although there is plenty of space in this great state, there is no room for a filthy hotel.

Norton and Decatur counties, which were the center of the epidemic of anterior poliomyelitis, are now being entertained by an extensive smallpox epidemic.

Four things Kansas needs: An efficient vital-statistics law; a state tuberculosis sanatorium; an enlarged and fully equipped state laboratory; a country slaughterhouse meat-inspection law.

The State Board of Health is working on plans for the free distribution of antitoxin to the poor of the state. They expect to have these plans ready and the antitoxin in stock by February 1 next.

The state tuberculosis exhibit is being crowded daily by interested Kansans. Special effort is being made to have all the school teachers and school children visit the exhibit. The average attendance is 4000 per week.

During an epidemic of diphtheria all sore throats should be looked upon with suspicion, and a provisional or modified quarantine observed until such time as a diagnosis can be made by the aid of the microscope.

A German chemist has invented a soap for the use of painters, whitewashers and others, which prevents lead poisoning by producing sulphuretted hydrogen, which transforms the lead on the surface bathed into the harmless sulphide of lead. This soap also prevents, in the same way, copper, mercury and arsenic poisoning.

Notwithstanding much and in some instances a vicious opposition, the order of the State Board of Health abolishing the common drinking cup on railroad trains and in educational institutions has been universally observed. It has been reported that Iowa, Michigan and Florida have followed suit, and now Oklahoma announces it will abolish the nuisance January 1.

The reports on drug analysis as published in the November number of the BULLETIN, and in this issue, on "Pepsin" preparations as found on the Kansas markets, through samples secured by the drug inspectors of the Department of Health, should be carefully read and studied by every physician and pharmacist of the state. It must be admitted that the tests made to determine the peptic value of these preparations show them to be of little or no therapeutic value.

Every physician in the state should read Professor Sayre's report on the analysis of "Beef, Wine and Iron" preparations found on the Kansas market, and published in the BULLETIN of the Kansas State Board of Health for October. This report, together with the report of the Council of Pharmacy, appearing in the November

20th issue of the *Journal of the American Medical Association*, on the value of certain "meat juices," should cause us all to "set up and take notice." Isn't it about time to go back to old-fashioned pharmacy and medicine?

A court at Milwaukee, Wis., has rendered a decision that the tuberculin test for cows is valuable and necessary in order to determine whether or not a cow is suffering from tuberculosis, and therefore not illegal as contended by the dairymen. The court concludes as follows: "That bovine tuberculosis is transmissible to man; that there is danger of infection to man from bovine bacilli from milk from tubercular cows; that the tuberculin test, while not infallible, is a reliable, trustworthy and useful diagnostic agent for determining the existence or nonexistence of tuberculosis in cattle."

An excellent and interesting contribution by Peters & Emerson, in the Nebraska Yearbook of the Board of Agriculture, under the caption "Dissemination of Tuberculosis by the Manure of Inflicted Cattle," concludes as follows:

"1. Tubercle bacilli may pass through the intestinal tract of cattle and retain their virulence.

"2. Tubercle bacilli in cattle may readily contaminate dairy products and cause infection in hogs.

"3. Animal inoculation and microscopical examination of the lesions produced are necessary to definitely establish the presence of tubercle bacilli in cow feces.

"4. Ingestion experiments with hogs, previously proven to be free from the disease by application of the tuberculin test, are valuable means of demonstrating tubercle bacilli in the manure of cattle.

"5. Hogs should not be permitted to run in the same pen with cattle, especially if the latter are known to be tuberculous.

"6. Dairy products from tuberculous cows, even though there be no infection of the udder, are a source of danger to man.

"7. The number of tuberculous cows which show no symptoms of disease but which excrete virulent tubercle bacilli in their manure, is sufficiently large to make this an important factor in the control of tuberculosis."

Resolutions for the Year.

By E. G. ROUTZAHN.

**For the Well That They May Keep Well!
For the Sick That They May Get Well!**

Resolved:

That I will take better care of my body.

Resolved:

**That I will seek to know more about my body
and so be better able to give it proper care.**

Resolved:

**That I will try to aid others that they may take
better care of their bodies.**

Resolved:

**That I will plan to learn more about the condi-
tions which affect the physical well-being of
others.**

Resolved:

**That I will give particular attention, as occa-
sion makes possible, to conditions affecting the
health of the poor, the ignorant and the neg-
lected.**

Resolved:

**That in school, church, club, lodge, union or
society I will encourage the discussion of health
topics and the suggestion of plans toward better
health conditions in the community.**

Resolved:

**That I will endeavor, every day of every year,
to**

"Sleep in the Fresh Air."

"Work in the Fresh Air."

"Play in the Fresh Air."

"Live in the Fresh Air."

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 1.

JANUARY, 1910.

VOL. VI.

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The first wealth is health.—*Emerson.*

Beware of fake cure-alls—they don't cure.

Every careless consumptive infects at least two others; have a
care !

Any citizen of Kansas may have the BULLETIN regularly for the
asking.

The rules and regulations of the State Board of Health were
made to be observed.

The greatest thing in the scientific world is the ability to think
clearly and logically.—*Prof. J. I. Willard.*

One of the purposes of vital statistics is to make disease centers
as obvious and as offensive as the smoke or dust nuisance.

Recent investigations have shown that the great majority of
truants and juvenile offenders have adenoids and enlarged tonsils.

VITAL STATISTICS

Reported to the Kansas Board of Health for December, 1909.

CONTAGIOUS AND INFECTIOUS DISEASES.

	Tubercu- losis.	Typhoid fever.	Diph- theria.	Scarlet fever.	Smallpox.	Measles.	Deaths.
Allen	0	0	2	1	1	0	0
Anderson	0	0	1	0	1	0	0
Atchison	1	0	0	0	0	4	0
Barber	0	0	0	0	3	1	0
Barton	0	0	0	0	7	1	0
Bourbon	0	0	2	2	3	0	0
Brown	2	2	2	1	0	5	0
Butler	0	0	0	0	0	0	0
Chase	0	0	1	0	0	0	0
Chautauqua	0	0	0	1	1	1	0
Cherokee	1	1	4	0	5	7	0
Cheyenne	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0
Clay	0	0	0	1	1	0	0
Cloud	1	1	4	0	0	0	15
Coffey	0	0	0	1	0	0	0
Comanche	0	0	1	0	2	1	0
Cowley	1	1	0	0	2	0	0
Crawford	0	0	0	0	0	0	8
Decatur	0	0	0	1	0	0	0
Dickinson	0	0	0	0	0	0	11
Doniphan	0	0	0	0	0	0	0
Douglas	0	0	2	2	0	2	0
Edwards	0	0	0	0	0	0	0
Elk	0	0	0	0	0	3	0
Ellis	0	0	0	2	0	4	0
Ellsworth	0	0	0	2	0	0	0
Finney	0	0	0	0	0	0	1
Ford	2	0	0	7	0	0	0
Franklin	1	0	0	3	0	2	0
Geary	2	1	0	0	0	0	0
Gova	1	1	0	1	0	3	0
Graham	1	0	0	0	0	12	0
Grant	0	0	0	0	0	0	0
Gray	0	0	0	0	0	3	0
Greeley	0	0	1	0	4	1	0
Greenwood	1	0	3	0	0	0	1
Hamilton	0	0	0	0	0	18	1
Harper	0	0	0	0	0	1	1
Harvey	4	4	1	0	2	0	0
Haskell	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	0
Jackson	2	0	2	1	0	0	5
Jefferson	0	0	0	1	0	3	0
Jewell	0	0	0	1	0	0	7
Johnson	0	0	0	0	0	0	0
Kearny	0	0	1	1	0	0	0
Kingman	0	0	1	1	1	1	0
Kiowa	0	0	0	2	0	0	0
Labette	2	0	7	0	0	7	0
Lane	0	0	0	0	0	0	0
Leavenworth	1	1	1	3	1	2	1
Lincoln	0	0	0	0	0	0	0
Linn	3	3	4	3	0	5	0
Logan	0	0	0	0	0	0	0
Lyon	3	3	5	4	3	3	1
Marion	0	0	0	5	0	1	0
Marshall	3	3	1	0	0	41	15
McPherson	1	0	0	2	1	1	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	1	1	0	0	0	0	0	0	0	0	1	0
Miami	0	0	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	1	1	0	0	2	0	0	0	0	0
Montgomery	2	0	2	0	2	1	8	0	16	0	0	0
Morris	2	2	8	0	2	0	4	0	0	0	7	0
*Morton	0	0	0	0	0	0	0	0	0	0	1	0
Nemaha	0	0	0	0	0	0	0	0	0	0	0	0
Necaho	1	1	6	1	5	0	1	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	8	0	0	0
Norton	1	0	0	0	0	0	0	0	0	0	0	0
Osage	0	0	0	0	1	0	6	0	0	0	0	0
Osborne	0	0	0	0	0	0	2	0	0	0	0	0
Ottawa	0	0	0	0	0	0	1	0	0	0	0	0
Pawnee	0	0	0	0	0	0	3	0	0	0	2	0
Phillips	4	4	2	0	1	1	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	50	0	6	0	0	0
Pratt	0	0	1	0	0	0	10	0	0	0	0	0
Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
Reno	2	1	1	0	3	1	5	0	57	0	0	0
Republic	1	1	0	0	1	0	1	0	0	0	0	0
Rice	0	0	0	0	0	0	5	0	0	0	0	0
Riley	2	0	1	0	2	0	0	0	9	0	0	0
Rooks	0	0	0	0	3	2	0	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	0	0	0	0	1	0	0	0	0	0
Saline	8	0	1	0	0	0	0	0	1	0	0	0
Scott	0	0	0	0	0	0	2	0	9	0	0	0
Sedgwick	0	0	0	0	1	0	3	1	1	1	0	0
Seward	2	0	0	0	0	0	1	0	0	0	0	0
Shawnee	0	0	0	0	6	0	0	0	1	0	0	0
Sheridan	0	0	0	0	0	0	7	0	2	0	0	0
Sherman	2	0	0	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	0	0	0	0	4	0	4	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
*Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	1	1	7	1	2	1	4	0	0	0	12	0
Thomas	3	0	0	0	0	0	4	0	0	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	1	1	11	1	2	0	0	0	0	0
Wallace	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	0	1	0	0	1	1	0	0	0	0
Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	1	1	4	4	3	1	0	0	0	0	1	0
Woodson	0	0	0	0	1	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	2	0	1	0	60	0	0	0
Cities:												
Fort Scott	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	1	1	1	1	0	0	0	0	0	0	1	0
Coffeyville	4	3	2	1	2	1	0	0	1	0	0	0
Kansas City	11	9	29	7	45	3	18	2	9	0	3	0
Leavenworth	2	1	9	1	10	0	3	0	0	0	0	0
Parsons	1	1	0	0	0	0	0	0	0	0	0	0
Pittsburg	1	1	1	1	7	1	1	0	0	0	0	0
Topeka	2	2	2	2	16	0	8	0	11	0	4	0
Wichita	0	0	4	3	10	1	2	0	0	0	0	0
State Institutions,	183	2	0	0	0	0	0	0	0	0	0	0

* No health officer.

The following county health officers were delinquent on December reports at the time of going to press with the BULLETIN: M. DeTar, M. D., Edwards county; J. H. Schrant, M. D., Lane county; Joseph Fowler, M. D., Miami county; J. U. Melugin, M. D., Rawlins county; W. B. Slagle, M. D., Smith county; Frank Lindsay, M. D., Trego county; W. L. Hopper, M. D., Fort Scott city.

The following counties had new health officers: Cloud, Greeley, Morton and Stevens.

FOOD ANALYSES No. XXVI.

By Prof. J. T. WILLARD, Analyst for the Board.

MANHATTAN, KAN., December 28, 1909.

I present in the following pages the results upon most of the food samples examined since the last report. They show that there is need of constant inspection and prosecution with reference to nearly all of the classes of food represented in the samples.

In reference to the butter, it will be noticed that not one of the lots showed even a single print that weighed 16 ounces. The average in one case was only 14.5 ounces, and the minimum in nearly all cases was less than fifteen ounces. It is quite possible that if creameries put up their prints so that each weighed one pound net the price would advance, but in any case it would be advantageous to the public to have the butter so delivered, as the intelligent purchaser of the present time desires to know what he is buying and how much he is getting. Honest competition between manufacturers also requires that a print of butter should mean practically the same thing as to weight wherever it is found. There is doubtless a slight change in weight due to evaporation of moisture, but this cannot account for the universal shortage exhibited above.

BUTTER.

* As to weight. Passed as to composition.

MILK AND CREAM.

Insp. No.	Serial No.	DEALER.	City.	Percentage.			Class.
				Fat.	Total solids.	Solids not fat.	
12160	2830	William Hoppen.....	Junction City.....	3.35	11.84	8.49	Passed.
6377	2844	A. A. Unmeissig.....	Leavenworth.....	4.05	12.99	8.94	Illegal.
6378	2845	Fred Sloan.....	".....	3.55	11.89	8.84	
6379	2846	Fred Sloan.....	".....	3.10	11.57	8.47	Passed.
6380	2847	Fred Sloan.....	".....	3.45	12.25	8.80	
6381	2848	Fred Sloan.....	".....	3.50	12.24	8.74	"
6382	2849	A. A. Unmeissig.....	".....	3.35	12.24	8.89	
6383	2850	A. A. Unmeissig.....	".....	3.60	12.25	8.65	"
6384	2851	A. A. Unmeissig.....	".....	3.35	11.97	8.62	
6385	2852	A. A. Unmeissig.....	".....	3.55	12.74	9.19	"
6386	2853	A. A. Unmeissig.....	".....	3.40	12.37	8.97	
6387	2854	A. A. Unmeissig.....	".....	3.40	12.27	8.67	"
6388	2855	A. A. Unmeissig.....	".....	3.50	12.43	8.93	
6391	2856	Mrs. Speathe.....	Baine City.....	4.00	12.26	8.26	Illegal.
6396	2907	J. R. Zimmerman.....	Kansas City.....	3.15	10.93	7.78	
6397	2908	Geo. Fredieck.....	".....	3.85	12.33	8.48	Passed.
6398	2909	J. W. Ford.....	".....	3.30	11.49	8.19	Illegal.
6399	2910	R. Williams.....	".....	3.95	12.74	8.79	Passed.
6400	2911	C Wilson.....	".....	2.95	10.82	7.87	Illegal.
6401	2912	W. A. Norwood.....	".....	4.00	12.33	8.31	"
9010	3101	Geo. Green (Union Hotel).....	McPherson.....	2.60	11.20	8.60	
7574	3118	W. L. Rochat.....	Larned.....	2.20	12.35	10.15	Passed.
7578	3122	Burt Bacon.....	".....	4.00	13.73	9.73	
9038	3154	J. B. Anderson.....	Salina.....	3.75	13.18	9.33	"
9039	3155	National Hotel.....	".....	4.10	13.89	9.79	
9040	3156	E. J. Lockwood.....	".....	3.75	13.68	9.98	"
9041	3157	National Hotel.....	".....	3.95	13.59	9.64	
9111	3267	L. Burlingame.....	La Crosse.....	3.50	12.29	8.79	Illegal.
7621	3271	B. Williamson.....	Newton.....	2.95	11.88	8.93	
7622	3272	J. M. Vogt.....	".....	5.40	14.34	8.94	Passed.
7624	3274	F. M. Johnson.....	".....	28.00	.....	.....	"
7625	3275	J. K. Tourtillot.....	".....	3.95	12.61	8.66	
6423	3277	F. Hornback.....	Parsons.....	3.80	12.54	8.74	"
6424	3278	R. F. Wilson.....	".....	4.45	13.27	8.82	
6425	3279	Geo. Van Hoorebeke.....	".....	4.50	13.41	8.91	"
6426	3280	Maurice Coffee.....	".....	4.20	12.32	9.12	
6427	3281	T. J. O'Connor.....	".....	3.70	11.70	8.00	"
6428	3282	W. L. Mosher.....	".....	4.35	13.24	8.89	
6429	3283	W. C. Moore.....	".....	4.10	13.70	9.60	Illegal.
7640	3312	K. R. Ringle.....	Hutchinson.....	2.80	11.26	8.46	
7641	3313	K. R. Ringle.....	".....	16.00	.....	.....	Passed.
7642	3314	S. C. Kessler.....	".....	3.50	12.70	9.20	
7643	3315	S. C. Kessler.....	".....	21.80	.....	.....	"
7644	3316	M. G. Albertson.....	".....	3.95	12.59	8.64	
7645	3317	J. Danford.....	".....	3.55	12.58	9.08	"
7646	3318	C. E. Durand.....	".....	4.20	13.29	9.09	
7647	3319	C. E. Durand.....	".....	25.05	.....	.....	"
7648	3320	F. E. Coughenour.....	".....	4.00	13.66	9.66	
7649	3321	F. E. Coughenour.....	".....	28.00	.....	.....	"
7650	3322	A. T. Maupan.....	".....	4.00	13.39	9.39	
7651	3323	C. E. Durand.....	".....	24.70	.....	.....	"
7652	3324	W. O. Matthew.....	".....	4.05	12.79	8.74	
7653	3325	W. O. Matthew.....	".....	28.00	.....	.....	"

ICE CREAM.

Insp. No.	Serial No.	DEALER.	City.	Per cent fat.	Class.
7522	2791	Iola Creamery Co.....	Iola.....	16.20	Passed.
7523	2792	W. L. Crabb.....	".....	10.30	Illegal.
7524	2793	W. G. Miller.....	".....	13.00	"
7525	2794	Brownfield & Davis.....	".....	10.55	
7532	2797	Phillips & Searle.....	Fort Scott.....	11.70	"
7533	2798	Franz Bachmann.....	".....	12.40	
7534	2799	Franz Bachmann.....	".....	7.80	"
7543	2831	Bon Ton Bakery.....	Chanute.....	11.80	
7544	2832	Bon Ton Bakery.....	".....	11.15	Passed.
7545	2833	Alexander & Co.....	".....	15.25	

ICE CREAM—CONCLUDED.

7546	2884	Chanute Candy Co.	Chanute	15.15	Passed.
6892	2857	Barlow Cigar Co.	Leavenworth	12.05	Illegal.
6898	2858	L. V. O'Kane	"	8.20	Passed.
6894	2859	John McCools	"	9.15	Illegal.
6896	2860	Leavenworth Creamery Co.	"	8.00	"
12156	2890	Harvey Eating House	Topeka	15.80	Passed.
53234	2882	Continental Ice Cream Co.	"	15.30	"
8001	2898	C. S. Noggle	Windom	9.45	Illegal.
8008	2884	W. E. Ditch	Galva	7.80	"
8005	2885	L. G. Tate	McPherson	10.15	Illegal.
8006	2886	D. A. Crispie	Hutchinson	12.50	"
9011	3102	Annabill & Almen	McPherson	16.50	Passed.
9012	3103	J. C. Owen	"	12.00	Illegal.
9013	3104	C. H. Hubbell	"	14.90	Passed.
9014	3105	E. C. Hower	Salina	10.90	Illegal.
9015	3106	Salina Sanitary Milk Co.	"	17.90	Passed.
9016	3107	A. W. Laughlin	"	17.70	"
9017	3108	Chumos & Williams	"	18.20	Illegal.
9018	3111	John Harrison	Grinnell	14.10	Passed.
9019	3112	City Drug Store	Oakley	15.00	"
9024	3113	John Clark	Grainfield	6.10	Illegal.
9025	3114	John P. Legleiter	Ellsworth	10.90	"
9028	3115	Dr. W. J. Scott	Sharon Springs	12.00	"
9029	3116	Harry Wheeler	"	1.10	"
7575	3119	R. L. Rennick	Larned	6.50	"
7576	3120	S. E. Burgess	"	7.20	"
7577	3121	Wm. Hantzappel	"	9.90	"
6402	3122	G. A. Ernst	Humboldt	12.15	"
6403	3123	C. M. Eaton	"	5.35	"
6404	3124	John Thalen	"	20.40	Passed.
6405	3125	Hess Drug Co.	"	22.00	"
7584	3127	J. B. Hunter	Jetmore	8.50	Illegal.
7583	3130	Hammond Ice Cream Co.	Great Bend	15.70	Passed.
6406	3131	C. H. Bratney	El Dorado	18.00	Illegal.
6407	3132	Kinsley & Hicks	"	11.50	"
7597	3133	Lott & Hawkins	Sterling	8.60	"
7598	3134	Lott & Hawkins	"	7.00	"
9030	3158	J. E. Beadle	Wilson	16.60	Passed.
9031	3159	Baker & Son	Ellsworth	11.00	Illegal.
9032	3160	A. A. Bisbee	"	11.80	"
9033	3161	S. Ledaux	Burlingame	11.90	"
9034	3162	Turner Bros	"	11.30	"
9037	3163	E. C. Hower	Salina	18.50	"
6413	3181	A. T. Reed	Pratt	14.70	Passed.
6415	3182	Gregory Bakery	"	11.10	Illegal.
6416	3183	Gregory Bakery	"	10.30	"
7602	3184	J. A. Walters	Hutchinson	11.70	"
7603	3185	J. A. Walters	"	6.70	"
7604	3186	A. J. Briggs	"	10.00	"
7605	3187	Fred Smith	"	11.40	"
7606	3188	Fred Smith	"	6.10	"
7607	3189	J. W. Seaman	"	9.50	"
7609	3190	A. J. Briggs	"	8.20	"
7610	3191	Mrs. F. Hanley	"	7.10	"
7619	3208	Bondurant Bros	New City	25.20	Passed.
9096	3226	J. F. Schnebly	Baldwin	14.15	"
9097	3227	J. O. Wasson	"	14.40	"
9098	3228	Scott Bros	Topeka	19.80	"
9101	3229	W. H. Batman	"	14.40	"
9102	3230	Fred T. Walker	"	19.10	"
7623	3273	W. L. Hulick	Newton	15.20	"
7626	3275	A. Unruh	"	18.60	Illegal.
7654	3326	A. W. Winkendoll	Hutchinson	10.50	"

In the table showing the analyses of ice cream, No. 6393 was sold as "frozen delicacies." As such it is marked "passed," though it is quite evident that it would be easy for a retailer to forget the manufacturer's name for the preparation and serve it to a customer who called for ice cream. There is undoubtedly a demand for cheaper frozen preparations, even though containing less butter fat than required for ice cream. Manufacturers should devise short, simple designations for such products and require that they be sold only under such names.

MEAT.

Insp. No.	Serial No.	KIND.	Seller.	City.	Preserv- atives found.	Class.
7553	3009	Hamburg steak,	P. H. Holmes	Kansas City....	Sulfites...	Illegal.
7590	3128	Chopped meat...	McKnown & Hayes...	Great Bend....	None.....	Passed.
7591	3129	Sausage.....	McKnown & Hayes...	.....	.....	.....
9085	3164	Hamburg steak,	{ T. A. Ruff, }	Salina	Sulfites...	Illegal.
9086	3165	Hamburg steak,	{ W. F. Watson, }	"	None.....	Passed.
9080	3192	Hamburg steak,	A. W. Laughlin.....	" .....	.....	.....
		Hamburg steak,	Kansas Packing	Topeka	Sulfites...	Illegal.
			House Market.....	Manhattan.....	.....	.....
9092	3210	Hamburg steak,	Ed. Lavery .....	" .....	.....	.....
9093	3211	Hamburg steak,	Schultz Bros.....	" .....	.....	.....
9110	3266	Ground meat...	Chas. Kottal.....	Bison .....	.....	.....
6421	3270	Hamburg steak,	F. Bower.....	Arkansas City..	.....	.....
9118	3299	Ground meat...	S. Boone.....	Junction City...	None.....	Passed.
9115	3300	Ground meat...	Buckmaster & Schultz,	Manhattan.....	.....	.....
9116	3301	Ground meat...	Wm. Allingham .....	" .....	.....	.....
9117	3302	Ground meat...	Schultz Bros.....	" .....	.....	.....
9118	3303	Ground meat...	A. N. Blackman.....	" .....	.....	.....
9119	3304	Ground meat...	Beattie & Penny.....	" .....	.....	.....
9120	3305	Ground meat...	Geo. Allingham. ....	" .....	.....	.....
9121	3306	Ground meat...	Beattie & Penny.....	Campus.....	.....	.....
9122	3307	Ground meat...	W. G. Cartney & Co..	Concordia.....	.....	.....

The presence of sulfites in so many samples of Hamburg steak and other ground meat is a condition that is anything but reassuring. The fact that sulfite preservatives, when used at all by retailers, are applied with no special regard to exactness of quantity adds greatly to the evil of the use of materials which have been shown to be injurious even in small quantities.

SAUSAGE.

A number of samples of sausage were taken for examination with reference to the presence of cereal, and also for examination as to their water content. The following table shows the results:

Insp. No.	Serial No.	MANUFACTURER.	City.	Percentage water.	
				Wiener.	S'sage.
5323	3294	Morris & Co.....	Kansas City.....	66.17	34.39
5324	3295	Swift & Co.....	"	52.91	58.34
5325	3296	Cudahy Packing Co.....	"	55.73	38.64
5326	3297	Armour Packing Co.....	"	55.85	40.98
5327	3298	Fowler Packing Co..	"	66.87	56.75

All the above samples gave good reactions for starch.

OYSTERS.

Insp. No.	Serial No.	SELLER.	City.	Wt. of meat.	Wt. of liquor.	Per cent solids in—		
						Meat.	Liquor.	Sample.
				Oz.	Oz.			
7627	8284	Peter Park.....	Newton	7.75	8.00	15.95	5.72	10.70
7628	8285	John Kerby.....	.. .....	11.75	4.25	16.98	5.40	13.90
7629	8286	John Robertson.....	.. .....	7.00	9.00	15.63	6.28	10.39
9128	8346	W. R. Smith & Son..	Topeka.....	15.50	2.75	17.27	4.59	15.36
9129	8347	W. R. Smith & Son..	.. .....	16.05	2.00	16.61	5.64	15.40
9130	8348	D. Woolf.....	.. .....	14.90	1.75	17.76	5.86	16.48
9131	8349	D. Woolf.....	.. .....	13.50	3.50	19.60	7.54	17.11
9132	8350	W. R. Smith & Son..	.. .....	22.25	2.00	15.61	5.73	14.81
9134	8351	W. R. Smith & Son..	.. .....	21.70	3.60	17.64	4.80	15.76

FLOUR.

Charges having been made that corn flour was being mixed with wheat flour, a number of samples were examined. Cornstarch was not detected in any of them. In most cases the water-content was determined, and in the following table the results obtained are exhibited :

Insp. No.	Serial No.	MANUFACTURER OR SELLER.	City.	Per cent water.
5321	2827	Hays Milling & Elevator Co.....	Hays.....	11.79
7536	2828	New Era Milling Co.....	Arkansas City....	10.82
7537	2829	New Era Milling Co.....	.....	10.92
7540	2839	Chanute Milling Co.....	Chanute.....	11.71
7541	2840	Chanute Milling Co.....	.....	11.29
5323	2841	Vernon & Sons.....	Emporia.....	.....

MISCELLANEOUS.

Insp. No. 7599, serial No. 3173. Dextrine Binder Flour. Manufactured by the Blair Milling Company, Hutchinson. This is a cereal preparation used in Hamburg steak and sausage. It had been used in Nos. 7590 and 7591. It is a grayish-yellow flour, the taste of which as well as the microscopical examination shows it to be from corn, at least to a large extent. No boron compounds or sulfites were found in the sample. It contained common salt and saltpeter.

Insp. No. 8007, serial No. 2898. "Cream Thick." Manufactured by O. J. Weeks & Co., New York, N. Y. This is sold for use in making ice cream. It is a gray-white odorless powder, tasting like gum. It swells to a jelly-like mass like gum tragacanth. Heated, it gives off the odor of burning starch, as does pure gum tragacanth. Both also give iodine reactions for starch. No saccharin, benzoates or salicylates were found. No reactions were obtained for gelatin. Microscopic examination failed to disclose diatoms, indicating the absence of agar-agar. The indications are that the substance is at least chiefly gum tragacanth.

Insp. No. 8008, serial No. 2899. Purity Ice Cream Filler. Manufactured by G. H. Jenkinson, Sioux City, Iowa. This material resembled No. 8007 in all essential particulars.

Insp. No. 8002, serial No. 2900. Choice Sweet Pickles. Manufactured by the Wichita Vinegar Works Company, Wichita. These pickles were packed in a Mason fruit jar with zinc top, and the top was somewhat corroded by the action of the vinegar. Analysis of the pickles showed the presence of aluminum, copper and zinc. Illegal.

Insp. No. 8004, serial No. 2902. Lemon Flavoring Extract, Quaker brand. Manufactured by Donophan & Co., St. Louis, Mo. Sold by W. E. Ditch, Galva.

Insp. No. 9108, serial No. 3265. Pickles. Manufactured by the Otto Kuehne Preserving Co., Topeka. The pickles were very green and had a rather astringent taste. They gave a good test for aluminum and slight test for copper. Illegal.

Insp. No. 9022, serial No. 3135. "Preservo." Manufactured by the Preservo Manufacturing Company, Galion, Ohio. Used by burning in refrigerator containing meats. According to the invoice, Preservo keeps meats and is the only process for doing so without the application of acids or drugs. It is a yellowish-black powder, having the appearance of a mixture of charcoal and sulfur. It burns with a blue flame like sulfur and with the characteristic odor of sulfur dioxide. Carbon disulfide dissolves out sulfur and leaves a fine black residue, which burns like charcoal, leaving very little ash. Treated with hot water and filtered, the filtrate on evaporation gives a brown sticky residue resembling molasses. The substance is evidently a mixture of sulfur and charcoal, containing a small amount of sugar. Illegal for use in preserving meat.

Insp. No. 7600, serial No. 3149. "Freeze-em Pickle." Manufactured by B. Heller & Co., Chicago, Ill. A white crystalline powder with a salty taste and easily soluble in water. It contains no organic matter and consists chiefly of common salt and saltpeter. It contains no borates or sulfites.

Insp. No. 9109, serial No. 3269. Liebig's Meat Konserver. Manufactured by Brecht Butchers' Supply Company, St. Louis, Mo. The label states that this is "For bologna, wiener and all kinds of smoked sausages. This preparation is the latest, most effective and most economical meat preserver known to science. Besides keeping the sausage fresh for an indefinite period, it also produces a beautiful pink color, which will not fade even after the

sausage is out." This was a pink substance which dissolved to a red solution. It gave good tests for borates, chlorides and nitrates, and for sodium and potassium. It also gave a reaction for sulphites and contained small amounts of calcium and iron. It is apparently a mixture of common salt, saltpeter, borax, a sulfite and some pink coloring matter.

Insp. No. 9127, serial No. 3361. Garlac Compound, Vacuum brand. Manufactured by B. Heller & Co., Chicago. This is a yellowish looking powder having the same general appearance as other sausage flours, but with a strong odor of garlie. It contained no chlorides, sulfites or nitrates. Microscopic examination showed the presence of cornstarch.

Insp. No. 9126, serial No. 3360. Catsup; no label. Jobber, Manhattan Wholesale Grocery Company, Manhattan. Sample gave a good reaction for benzoates and is artificially colored by coal-tar coloring matter.

FOOD ANALYSES No. XXVII.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and Asst. Prof.
H. LOUIS JACKSON, M. S., Food Analyst.

VINEGAR.

No.	Acid.	Solids.	Ash.	Alka- linity of soluble ash.	Remarks.
2351.....	2.50	1.74	0.25	34.52	Illegal.
2469.....	4.31	1.68	0.33	47.32	Passed.
7620.....	2.72	1.05	0.27	36.08	Illegal.
9094.....	4.70	2.17	0.17	18.88	"
9133.....	4.58	1.28	0.38	.....	"
9152.....	5.81	1.73	0.29	32.44	Passed.
9182.....	4.92	1.60	0.43	49.52	"
9151.....	3.99	2.75	0.36	41.20	"
9153.....	8.47	0.86	0.27	.....	"
9201.....	3.90	2.30	0.22	22.44	Illegal.
9202.....	3.90	2.20	0.21	21.50	"
9203.....	4.28	1.60	0.42	51.34	Passed.

ADDITIONAL DATA TO ILLEGAL VINEGARS LISTED ABOVE.

No. 2351. Label, Cider Vinegar. Said to be home-made cider vinegar. Bought from W. J. Cole, Concordia. Retailer, W. F. Mosher, Huscher. See analysis. Illegal.

No. 7620. Label, Cider Vinegar. Bought from farmer, A Sites. Retailer, B. French, Maize. See analysis. Illegal.

No. 9094. Label, "Silver Leaf Cider Vinegar." Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, Messler & Fobes, Winona. See analysis. Illegal.

No. 9133. Label, Cane Sugar Vinegar. Retailer, Boyd Clithers, Concordia. Inspector asked for colored distilled vinegar. This is

a case of substitution of sugar vinegar for colored distilled vinegar, and so illegal.

No. 9201. Label, "Cider Vinegar." Brand, "Silver Leaf Cider Vinegar." Manufacturer, The Otto Kuehne Preserving Company, Topeka. Retailer, Herman Plesse, Wamego. Sample drawn from unopened barrel. See analysis. Illegal.

No. 9202. Label, "Cider Vinegar." Brand, "Silver Leaf Cider Vinegar." Manufacturer, The Otto Kuehne Preserving Company, Topeka. Retailer, Herman Plesse, Wamego. This sample taken from barrel used for retailing. See analysis. Illegal.

LEMON EXTRACT.

No. 2399. Label, "Twilight Zone, 2 ozs. Lemon Artificially Colored. Alcohol 25 per cent. This extract is made from pure lemon oil." Manufacturer, Twilight Zone Chemical Company, Lincoln, Neb. Retailer, A. F. Flech, Harlan. Retail price, 10 cents. Oil of lemon, 0.15 per cent. Coal-tar color present. Scarcely any flavor of lemon. Illegal.

No. 2446. Label, "Essence of Lemon. Oil 3 per cent, alcohol 75 per cent." Manufacturer not given. Retailer, Adolph Lange, Leavenworth. Oil of lemon, 2 per cent. Alcohol, 76 per cent. Essence of lemon contains 5 per cent of lemon oil, and is made by the use of deodorized alcohol which is 95.1 per cent of absolute alcohol by volume. Illegal.

No. 2504. Label, "Pure Extract of Lemon." Oil of lemon, 7.4 per cent. Added color not found. Passed.

No. 9081. Label, "Pure Orange Flavoring." Oil of orange, 5 per cent. Artificial color not found. Alcohol, 78.7 per cent. Methyl alcohol not found. Passed.

No. 9114. Label, "Our Best High Quality Extract of Lemon." Oil of lemon, 4.9 per cent. Artificial color not found. This is below standard in lemon oil.

No. 9159. Label, "Flavoring Extract of Lemon." Retail price, 50 cents. Contains 4 ounces. Oil of lemon, 5.4 per cent. Artificial color not found. Passed.

No. 2522. Label, "Spt. of Limonis. C. L. Cowdery, Pharmacist, Ottawa." Manufacturer and retailer, C. L. Cowdery, Ottawa. Taken from shelf bottle. Oil of lemon, 0.5 per cent. Illegal.

No. 8384. Label, "Lemon Extract." Oil of lemon, 8 per cent. Passed.

No. 9139. Label, "Pure Flavoring Extract of Lemon. Full 2 ozs." Oil of lemon, 5 per cent. Passed.

VANILLA.

No. 7563. Label, "1½ ozs. Full Measure, Strictly Pure Flavoring Extract of Vanilla, 40 per cent alcohol." Winton lead number, 1.36. Absolute alcohol by volume, 34.4. Vanilla resins satisfactory. This is passed in regard to its being a vanilla extract, but is 8.4 per cent short measure, and deficient in alcohol as stated on label.

No. 2336. Label, "Ext. Vanilla. Geo. L. Fisher & Co., druggists, Superior, Neb." Retailer, Geo. L. Fisher & Co., Webber. Taken from shelf bottle. Coumarin present in large quantity. This extract is grossly adulterated and misbranded. Illegal.

No. 2445. Label, "Ext. of Vanilla and Tonka. Alcohol 75 per cent." Retailer, Adolf Lange, Leavenworth. Bottled ready for sale. Coumarin present in small quantities. This extract is deficient in extractive matter from the vanilla and tonka beans.

No. 2503. Label, "Pure Extract Vanilla." Bottled ready for sale. Passed.

No. 6247. Label, "Standard Extract of Vanilla." Manufacturer, Malacca Mills, Kansas City. Retailer, W. C. Buck, Kansas City, Kan. Coumarin present in very large quantities. Winton lead number, 0.28. This extract is grossly adulterated and misbranded. Illegal.

No. 9135. Label, "Flavor of Vanilla and Vanillin, Artificially Colored." Passed on label.

No. 9137. Label, "Imitation Vanilla Flavoring, Artificially Colored." Winton lead number, 0.23. Coumarin present in large quantities. Passed on label.

No. 9158. Label, "Flavoring Extract of Vanilla." Passed.

BEVERAGES.

No. 7614. Label, "Apple Cider." Manufacturer, Doniphan & Co., St. Joseph, Mo. Retailer, Drake Bros., Ness City. Alcohol by volume, 6.58 per cent. Made from condensed apple cider compound. One gallon of compound to four gallons of water. This is artificially produced and should be so labeled.

No. 7615. Label, "Orange Cider." Manufacturer, not given. Retailer, Drake Bros., Ness City. Made from an extract; is an imitation beverage and should be so labeled. Contains coal-tar dye not stated. Illegal.

No. 7616. Label, "Cherry Cider." Manufacturer, C. E. Potts Drug Company, Wichita. Retailer, Drake Bros., Ness City. Made from an extract; is an imitation and should be so labeled. Contains coal-tar dye. Illegal.

No. 7618. Label, "Peach Cider." Manufacturer, C. E. Potts Drug Company, Wichita. Retailer, Drake Bros., Ness City. Made from an extract; is an imitation and should be so labeled. Contains coal-tar dye. Illegal.

No. 9049. Label, "Grape Punch." Manufacturer, The Anderson-Armstrong Company, Topeka. Retailer, A. E. Allen, White City. Is an imitation and should be so labeled. Contains coal-tar dye and benzoic acid. Illegal.

No. 9050. Label, "Cherry Punch." Manufacturer, The Anderson-Armstrong Company, Topeka. Retailer, A. E. Allen, White City. Is an imitation and should be so labeled. Contains coal-tar dye and benzoic acid. Illegal.

MOLASSES.

No. 6334. Label, "New Orleans Molasses." Passed.

RICE.

No. 7507. Label, "Head Rice. Defiance Brand." Packed by the Letts-Spencer Grocery Company, St. Joseph, Mo. Retailer, East Side Market, Pittsburg. Coated with glucose and mineral matter, and not labeled to indicate coating substances. No directions for removing coating substances. Food inspection decision No. 67. Illegal.

PICKLES.

No. 7554. Label, "Congress Brand Pickles. Sweet Pickles." Bought from Kansas City Wholesale Grocery Company. Retailer, Mrs. D. F. Miller, Kansas City, Kan. Contain alum and copper. Illegal.

PINEAPPLE FLAVOR.

No. 7633. Label, "This flavor is composed of Pineapple Oil, grain spirits, artificially colored." This is a sample of old goods, having been purchased about June 15, 1909, and names are withheld at present. Misbranded, in that it is labeled so as to deceive the purchaser and lead him to think it is made from pineapple oil, the product of the fruit, whereas there is no pineapple oil derivable from the fruit, but only a chemically produced, artificial, so-called pineapple oil, which is bought and sold as artificial. Such flavors are imitation flavors, and in this case are required by law to be labeled "Imitation Pineapple Flavor." Illegal.

BANANA FLAVORING.

No. 7634. Label, "Banana Flavor. This flavor is composed of banana oil, grain spirits, artificial color." This is a sample of old goods, having been purchased about June 15, 1909, and names are

withheld at present. Misbranded, in that it is labeled so as to deceive the purchaser and lead him to think it is made from banana oil derived from the fruit, whereas there is no banana oil derivable from the fruit, but only a chemically produced, artificial, so-called banana oil, which is bought and sold as artificial. Such flavors are imitation flavors, and in this case are required by law to be labeled "Imitation Banana Flavor." Illegal.

No. 7595. Label, "Optimo one-half standard strength flavor of Blackberry. This is absolutely pure flavor prepared from natural oils derived from fruit or berry." This is a sample of old goods, purchased about August 31, 1908. This sample is misbranded in two ways. In the first place it gives a false impression by claiming to be one-half standard strength, while there is no standard strength for this kind of a product. In the second place, it is misbranded because it claims to be made from natural oils derived from fruit or berry, while there is no oil obtainable from the blackberry. This product is an imitation flavor, and should be so labeled. It is composed of artificial ethers and weak alcohol. Illegal.

MISCELLANEOUS.

No. 6298. Label, "Maple Syrup." Ash, 0.49; water, 32.9; alkalinity of soluble ash, 0.68; alkalinity of insoluble ash, 0.28; ratio soluble ash divided by insoluble ash, 2.8. Passed.

No. 9058. Label, "Preservative." Manufacturer, Los Angeles Phosphate Company, St. Louis, Mo. Retailer, Byron Willcuts, Topeka. This is a strong solution of sodium benzoate, which is used in making artificial cherry, orange, grape, phosphate and other drinks, and is added in the proportion of two ounces to fourteen gallons.

No. 9059. Label, "Preservative." Manufacturer, Los Angeles Phosphate Company, St. Louis, Mo. Retailer, The Anderson-Armstrong Company, Topeka. This is used with apple compound and imitation flavor of orange, cherry, grape, etc., to make artificial beverages, and is added in the proportion of two ounces to fourteen gallons. Samples Nos. 9049 and 9050 (beverages) show the kind of products in which it is used, and also show that the fact of its presence is not allowed to appear on the label by the retailer.

Over 60 per cent of tincture of iodine samples secured from druggists all over the state by the drug inspectors of the State Board of Health have been found to be adulterated, by being substandard in strength, or differing in composition from the U. S. P.

DRUG ANALYSES No. XXVI.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The analyses of drug products received during the month past have consisted of a great variety of preparations, such as iodine tinctures, peppermints, camphors, compound tincture of gentian, a few patent medicines, some samples of spices, pepsin preparations and miscellaneous products. A continuation of Mr. Jas. T. Bowles's work on pepsin preparations, when completed, will probably be of considerable value to the medical as well as the pharmaceutical profession.

Sample No. 3013 is a patent medicinal preparation known as "Regulin." Although this article has been recognized by the Council of Pharmacy and Chemistry of the American Medical Association, this fact does not carry with it, or is not intended to carry with it, a recommendation of the preparation. The article is mentioned on page 117 of the "New and Nonofficial Remedies," published by the American Medical Association. It is stated in the publication that Regulin has been accepted and retained temporarily, or words to that effect. All such articles had been accepted "before rule 8 was revised," and such articles the Council has decided "to retain, at least for the present."

We have been somewhat interested in the keeping qualities of pepsin preparations, and those containing ferments, in connection with elixir and vinous vehicles. National Formulary preparations which have been made by us and kept for four weeks have lost in peptic power from 10 to 30 per cent. Our study of the question leads us to believe that if physicians wish to employ an elixir of pepsin or wine of pepsin in their practice, these preparations should be extemporaneously made from fresh material, and the patient should be informed that after a certain date the liquid ceases to be of value.

Examination of the following pepsin preparations is herewith reported :

No.	NAME.	Acidity.	Color.	Amount of undigested* albumen.
2437	Elixir Lactated Pepsin, Iron, Quinine and Strychnine.....	Normal...	Pale, yellowish green (cloudy).....	32 cc.*
2374	Elixir Lactated Pepsin.....	Normal...	Red.....	27 cc.
2460	Gestul (Dana)†.....	Normal...	Light wine.....	Less than 1 cc.
2465	Wine Pepsin.....	Normal...	Brown (cloudy).....	32 cc.
2462	Pepto Bovine.....	Normal...	Deep garnet.....	34 cc.
2459	Pepso. Laxotine.....	Low.....	Deep garnet.....	19 cc.
2457	Wine Pepsin.....	High.....	Dark wine (cloudy).....	32 cc.
2427	Elixir Panc. Pep. and Bis.....	Low.....	Deep garnet.....	32 cc.

* In the analysis a freshly made National Formulary preparation is employed as standard, and of this preparation there is taken, in each case, an amount of liquid corresponding to 0.003 gms. of pepsin. In unofficial preparations an allied National Formulary preparation is taken as standard, as, for example, for the elixir of lactated pepsin, iron, quinine and strychnine (unofficial), the elixir of pepsin is taken as standard. Therefore, the process employed in the analysis is so adjusted that at the end of the 2½ hours' digestion there should be left (if the preparation is of standard pepsin strength) not more than 1 cc. of undigested albumin.

† Manufactured by Dana Dix & Co., \$1.25 per bottle (pint?).

Lab. No. 3254, Insp. No. 2140. "Capaso Anti-Pain Tablets." Home Remedy and Supply Company, York, Pa. Declared to contain 3.5 grains acetanilid in each tablet. Found to contain acetanilid, caffeine and sodium bicarbonate.

Lab. No. 3254, Insp. No. 2137. "Vitæ Ore." Contains soluble salts of iron and magnesium. Iron calculated as Fe_2O_3 , 21.36 per cent. Magnesium calculated as MgO , 2.23 per cent.

Lab. No. 3481, Insp. No. 7564. "Ground Allspice." Francisco & Prigbert. Ash, 5.59 per cent; ether extract, 5.53 per cent; non-volatile ether extract, 4.87 per cent; volatile ether extract, 0.66 per cent. (Microscopically; no foreign elements.)

Lab. No. 3482, Insp. No. 7567. "Ground Pepper." Manufactured by the Lee Mercantile Company, Salina. H. R. Brown, retailer, Dodge City. Gross weight, 16 oz. Price, 30 cents. Ash, 5.98 per cent; total ether extract, 8.26 per cent; nonvolatile ether extract, 7.8 per cent; volatile ether extract, 0.46 per cent. (Examined microscopically; found to be largely *Piper longum*.)

Lab. No. 3483, Insp. No. 7570. Ground Cloves. "Jubilee" brand. Central Mercantile Company, Hutchinson. Ed. D. Rumsey, retailer, Dodge City. Ash, 13.2 per cent; total ether extract, 8.31 per cent; nonvolatile ether extract, 7.58 per cent; volatile ether extract, 73 per cent; insoluble ash, 1.31 per cent; soluble ash, 11.89 per cent. Soluble ash contains iron and aluminum. (Examined microscopically; contains clove stems, allspice, leguminous starch and other foreign matter.) Adulterated.

Lab. No. 3529, Insp. No. 9085. "Pure Powdered Black Pepper."

A. B. Seelye Medicine Company, Abilene. Ash, 6.38 per cent; total ether extract, 8.84 per cent; nonvolatile ether extract, 8.34 per cent; volatile ether extract, 0.50 per cent. (Microscopically; no foreign element.)

Lab. No. 3530, Insp. No. 9086. "Pure Powdered Nutmeg." A. B. Seelye, Abilene. Ash, 3.89 per cent; total ether extract, 39.04 per cent; nonvolatile ether extract, 28.57 per cent; volatile ether extract, 10.47 per cent. (Microscopically; no foreign elements.)

Lab. No. 3531, Insp. No. 9087. "Pure Powdered Cinnamon." A. B. Seelye, Abilene, retailer. Ash, 4.17 per cent; total ether extract, 4.45 per cent; nonvolatile ether extract, 2.97 per cent; volatile ether extract, 1.48 per cent. (Microscopically; no foreign elements.)

Lab. No. 3532, Insp. No. 9088. "Pure Powdered Ginger." A. B. Seelye, Abilene. Ash, 7.45 per cent; total ether extract, 5.28 per cent; nonvolatile ether extract, 4.62 per cent; volatile ether extract, 0.61 per cent. (Microscopically; no foreign elements.)

Lab. No. 3533, Insp. No. 9089. "Pure Powdered Mustard." A. B. Seelye, Abilene. Ash, 5.1 per cent; total ether extract, 19.55 per cent; nonvolatile ether extract, 19.47 per cent; volatile ether extract, 0.08 per cent. (Examined microscopically; very small amount of wheat starch; otherwise no foreign elements.)

Lab. No. 3554, Insp. No. 2232. "Citrine Ointment." A. W. Stevens, Atchison. Passed.

Lab. No. 3555, Insp. No. 2233. "Cantharides Ointment." A. W. Stevens & Co., Atchison. Passed.

Lab. No. 3556, Insp. No. 2234. "Blue Ointment." A. W. Stevens & Co., Atchison. Contains 33.3 per cent mercury. Passed.

Lab. No. 3564, Insp. No. 2242. "Acidum Nitrohydro Chloricum Dilutum." W. V. Ingham, Atchison. Passed.

Lab. No. 3659, Insp. No. 2274. "Ung. Resinæ." — Bechard, Clyde. A rancid preparation; was not made according to official formula for resin cerate.

Lab. No. 3728, Insp. No. 2338. "Jerome's Iron Tonic and Blood Purifier." Jerome Chemical Company, St. Louis, Mo. Alcohol declared by manufacturer, 22 per cent; alcohol found, 19.46 per cent. Total solids in 100 cc., 8.05 gms.; ash, 0.308 gm.; organic solids and volatile matter, 7.74 gms.; iron in 100 cc. calculated as Fe_2O_3 , 0.120 gm.; other inorganic solids, 0.188 gm.

Lab. No. 3749, Insp. No. 2359. "Pure Carbolic Acid." O. F. Brewer, Norway, retailer. Put up by H. J. Brown & Co., Atchison.

Leaves residue on evaporation, 0.14 per cent. Contains 91.3 per cent phenol.

Lab. No. 3751, Insp. No. 2361. "Griswold's Kidney and Backache Pills." Griswold Drug Company, Winterset, Iowa. Contains potassium nitrate. Organic solids, 71 per cent. Ash composed largely of calcium and magnesium salts.

Lab. No. 3799. Insp. No. 2409. "Goodrich Catarrh, Cold and Croup Balm." Contains petrolatum and menthol.

Lab. No. 3811, Insp. No. 8353. "Alcohol." C. H. Eaton, Erie, retailer. McPike Drug Company, jobber. Found to be of official strength. Passed.

Lab. No. 3812, Insp. No. 8354. "Alcohol." A. E. Theilen, St. Paul, retailer. Faxon & Gallagher, jobber. Found to be of official strength. Passed.

Lab. No. 3813, Insp. No. 8355. "Alcohol." John Kaff, Longton, retailer. McPike Drug Company, jobber. Found to be of official strength. Passed.

Lab. No. 3815, Insp. No. 8357. "Alcohol." A. G. Long, Elk Falls, retailer. Glasner & Barzen, Kansas City, manufacturer. Sample is cloudy; has slight brown color and contains some sediment on bottom. Found to have official alcoholic strength.

Lab. No. 3817, Insp. No. 8359. "Alcohol." H. G. Farris, Moline, retailer. Faxon & Gallagher, jobber. Found to contain required percentage of alcohol.

Lab. No. 3820, Insp. No. 8362. "Alcohol." G. M. Henderson, Burden, retailer. Faxon & Gallagher, jobber. Contains 94.7 per cent alcohol.

Lab. No. 3823, Insp. No. 8365. "Bay Rum." J. W. Hyler, Benedict. Contains 49 per cent alcohol.

Lab. No. 3881, Insp. No. 2422. "Lac Sulphur." Examined for adulteration. Passed.

Lab. No. 3898, Insp. No. 2439. "Tr. Calumba." S. M. Dotterer, Leavenworth. Residue from 100 cc., 5.18 gms.; alcohol, 61.25 per cent.

Lab. No. 3912, Insp. No. 2453. "Lac Sulphur." Examined for adulteration. Passed.

Lab. No. 3917, Insp. No. 2458. "Dr. Kilmer's Sure Headache Cure." Contains acetanilid, caffeine, sodium carbonate and monobromated camphor. Proportion of acetanilid not stated in proper terms, in proper place on box, nor in proper sized type.

Lab. No. 3929, Insp. No. 8458. "Sweet Spirit of Niter." Arnold

Drug Company, Topeka. Found to contain 2.81 per cent ethyl niter.

Lab. No. 3932, Insp. No. 8461. "Tr. Arnica." The Arnold Drug Company, Topeka. Found to contain 45.4 per cent alcohol.

Lab. No. 3973. "Shampoo or Hair Dressing and Cleaner." Purchased from door vendor, reputed from San Antonio, Tex. Ash composed of sodium chloride.

Lab. No. 3913, Insp. No. 2454. Regulin—Patented August 25, 1909. "Favorably passed upon by the Council of Pharmacy and Chemistry of the American Medical Association." Alleged to be an intestinal "regulator"; claimed to be "A natural vegetable product in the form of golden shreds." On examination this preparation is found to consist of agar-agar, colored by an aqueous infusion of cascara. One gram of the substance will absorb 50 grams of water, forming a jelly. One gram, when extracted by water till practically exhausted of color, yields about 0.250 gram of dry, solid extractive, which has a sweetish, disguised bitter taste, resembling that of tasteless cascara. As the article consists of two substances—agar-agar and a vegetable extractive—it is not a natural vegetable product. It is rather an artificial product made of two products—one a gelatin substance, the other a vegetable extractive. Therefore the above statement that "it is a natural vegetable product" is misleading.

COMPOUND TINCTURE OF GENTIAN.

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Residue from 100 cc.	Remarks.
3827	8369	Burke Bros.....	West Mineral.....	50.20	3.05	No data.
3838	8375	Wm. F. Fee.....	Meade.....	39.25	2.90	"
3867	8469	Fred Haines Drug Co.,	Coffeyville.....	42.00	3.60	"
3914	2455	J. M. Obeles.....	Leavenworth.....	43.50	3.93	Made from fluid Ext.
3428	2464	S. O. Putnam.....	Leavenworth.....	54.00	5.06	Made from drug.
3931	8460	Arnold Drug Co.....	Topeka.....	51.25	4.52	No data.

SPIRIT OF CAMPHOR.

Lab. No.	Insp. No.	NAME.	City.	Gms. of camphor in 100 cc.	Remarks.
3748	2358	O. F. Brewer.....	Norway.....	12.30	14.9% added water.
3757	2367	Herman Colson.....	Ionia.....	11.77	
3759	2369	D. R. Seymour.....	Ionia.....	11.29	
3766	2376	A. M. Lowellan.....	Gaylord.....	12.20	
3776	2386	Drs. Monk & Hall.....	Cedar.....	13.21	
3778	2388	Zimmerman Drug Co.....	Portia.....	15.87	32.7% added water.
3793	2403	H. J. Chapman.....	Speed.....	13.07	
3797	2407	H. W. Dennis.....	Woodston.....	11.46	
3885	2426	Everson's Pharmacy.....	Cawker City.....	8.44	
3889	2430	O'Brien Pharmacy.....	Beloit.....	4.80	
3906	2446	Adolph Lange.....	Leavenworth.....	8.85	18.5% camphor and alcohol.

TINCTURE OF IODINE.

Lab. No.	Insp. No.	NAME.	City.	Gms. of iodine in 100 cc. of tincture.	Potassium iodide.
3809	8351	Homer E. Stevens.....	Erie.....	6.72	4.98
3810	8352	Dr. M. E. Lake.....	.....	7.17	4.70
3814	8356	Wm. Wright.....	Elk City.....	7.62	4.48
3816	8358	E. W. Etling.....	Moline.....	4.27	1.28
3818	8360	Dr. S. R. Swan.....	Howard.....	7.45	5.38
3821	8362	E. R. Bailey.....	Burden.....	2.98	Absent.
3822	8364	Thomas Sturm.....	Atlanta.....	6.62	5.48
3824	8368	J. R. Dryden.....	Buffalo.....	5.15	Absent.
3880	8458	Arnold Drug Company.....	Topeka.....	6.92	5.98

ESSENCE OF PEPPERMINT.

Lab. No.	Insp. No.	NAME.	City.	Cubic centimeters of oil in 100 cc.	Remarks.
3727	2387	Geo. L. Fisher & Co.....	Webber.....	8.48	Colorless.
3756	2366	Herman Colson.....	Ionia.....	trace.	49.5 % added water; artificially colored.
3772	2382	S. E. Cogswell.....	Kirwin.....	4.92	Color, light yellow.
3773	2382	Dr. L. T. Brown.....	.....	8.65	
3777	2387	Drs. Monk & Hall.....	Cedar.....	8.15	Colorless.
3782	2392	Baldwin & Co.....	Osborn.....	12.55	
3791	2401	J. B. Hatfield.....	.....	4.23	Colorless.
3794	2404	H. J. Chapman.....	Speed.....	19.39	Color, light yellow.
3880	2421	Forline & Utt.....	Downs.....	3.87	20.2 % added water; colorless; contains sediment.
3883	2424	B. H. Hackett.....	Cawker City.....	9.99	
3889	2440	Fred Schroeder.....	Leavenworth.....	2.25	21.2 % added water.
3808	2444	Adolph Lange.....	.....	1.92	30.5 % added water.

TINCTURE OF GINGER.

Lab. No.	Insp. No.	NAME.	City.	Per cent of alcohol.	Remarks.
3882	2302	Red Cross Pharmacy.....	Jamestown.....		Sample insufficient.
3819	8361	Spray & Snodgrass.....	Grenola.....	92.10	
3826	8338	Francis Ryan.....	West Mineral.....	94.00	
3848	8390	Thomson & Taylor Spice Co.	Chicago.....	29.00	Contains capsicum, added water, and considerable sediment.
3863	8405	Palace Drug Co.....	Coffeyville.....	93.20	
3864	8406	M. E. Woods Drug Co.....	.....	93.00	
3866	8408	Owl Pharmacy.....	.....	93.00	
3813	8416	Hebrank Drug Co.....	Independence.....	91.00	
3879	2420	Forline & Utt.....	Downs.....	64.50	25% added water.
3827	8456	Arnold Drug Co.....	Topeka.....	92.25	

ELIXIR OF POTASSIUM BROMIDE.

Lab. No.	Insp. No.	NAME.	City.	Gms. of potassium bromide in 100 cc.	Remarks.
3849	8391	James L. Carter.....	Emporia.....	17.26	Colored.
3850	8392	J. A. Moore Drug Co.....	".....	17.26	Colorless.
3852	8394	D. W. Hainer.....	".....	21.87	Faint pink; above standard.
3853	8395	B. Whelden Drug Co.....	Emporia.....	17.85	Colored.
3861	8408	E. M. Kane.....	Coffeyville.....	17.00	Colorless.
3868	8410	The Jordan-Flores Drug Co.....	Coffeyville.....	22.26	Faint pink; above standard.
3876	8418	Charles L. McAdams.....	Independence.....	21.27	Colorless; above standard.
3909	8443	Ed. C. Fritsche.....	Leavenworth.....	17.14	Colorless.
3949	2483	R. L. Igel.....	".....	21.20	Colored; above standard.
3959	2498	Adolf Lange.....	Leavenworth.....	17.60	Colorless.
3962	2496	Mehl & Schott.....	".....	19.50	Colored; above standard.
3966*	2500	Charles Curry.....	Easton.....	17.80	Colorless.

* Elixir of sodium bromide.

Lab. No. 4059 $\frac{1}{2}$, Insp. No. 3089 $\frac{1}{2}$. "Toris Compound." Globe Pharmaceutical Company, Chicago, Ill. "A remedy for rheumatism, blood diseases, coughs and colds." This preparation is intended to be used as a stock preparation for making a medicinal remedy. This remedy is recommended to be made in the following manner:

Toris compound 1 oz.
 Syrup sarsaparilla compound. 1 oz.
 Spirits frumenti (whisky) 8 oz.

The Toris Compound for making the above preparation consists of sugar 77 per cent, sodium salicylate 15 per cent, and potassium nitrate (calculated by difference) 8 per cent. The consumer is cautioned to keep this preparation at an ordinary temperature, "preferably as near the floor as possible." It is stated also that when exposed to extreme heat the substance melts, then solidifies; but this, it is claimed, does not injure the article, but makes it inconvenient to dispense.

From such ingredients as above noted we should say there is a risk of decomposition. There is an incompatibility between a nitrate and a salicylate. If the nitric acid of the nitrate should be liberated, as it may likely be, in the presence of such organic matter as sugar, it has a tendency to unite with salicylic acid of the sodium salicylate and to form nitro compounds or to bring about an oxidation. The physiological action of such new compounds is uncertain. A bottle of this substance in our laboratory (No. 2858),

on standing, assumed a reddish-brown color, showing decomposition, but this it must be admitted was due possibly to undue exposure to the air. Still, the phenomenon confirms our suspicion that the compound should be handled very carefully, and should not be placed in the hands of the inexperienced.

STATE WATER SURVEY No. V.

By E. H. S. BAILLY, Ph. D., Director, and C. C. YOUNG, Analyst.

LAWRENCE, KAN., January 15, 1910.

Dr. S. J. Crumbine, Secretary State Board of Health:

DEAR SIR—We have to report to you the following analyses made in our laboratory since the date of your last report. These analyses are mostly of city and school supplies.

SANITARY ANALYSES OF WATERS.

(Parts per million.)

No.	CITY.	Date, 1909.	N. in free NH ₃	N. in alk. NH ₃	N. in NO ₂	N. in NO ₃	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed.
82	Burlington.....	10 6	0.044	0.090	10.0	0.001	80.0	864.0	228.0	1.58
83	Burns.....	10 15	0.140	0.158	.....	0.001	30.0	457.0	182.0	14.00
84	Br.....	11 2	0.044	0.088	2.0	trace	12.0	399.0	182.0	1.83
	" water.....	11 2	0.022	0.060	1.0	.....	28.0	518.0	180.0	1.80
85	Ci.....	9 27	n. d.	n. d.	.....	trace	n. d.	n. d.	n. d.	n. d.
	.....	9 27	n. d.	n. d.	.....	trace	68.0	n. d.	n. d.	n. d.
	.....	9 27	n. d.	n. d.	0.5	trace	97.0	n. d.	n. d.	n. d.
	.....	9 27	n. d.	n. d.	.....	trace	70.0	n. d.	n. d.	n. d.
	.....	9 27	n. d.	n. d.	.....	trace	215.0	n. d.	n. d.	n. d.
	.....	9 27	n. d.	n. d.	.....	trace	42.0	n. d.	n. d.	n. d.
86	Cl.....	10 22	n. d.	n. d.	.....	.....	88.0	579.0	248.0	11.40
87	Caney:									
	(a).....	10 8	.....	.....	.....	.....	.....	.....	.....	.....
	(b).....	10 8	.....	.....	.....	.....	.....	.....	.....	.....
88	Caney:									
	(a) Intake.....	10 28	n. d.	n. d.	.....	.....	211.0	799.0	111.0	23.80
	(b) Birch creek.....	10 28	n. d.	n. d.	0.3	.....	108.0	948.0	190.0	30.30
	(c) Tap.....	10 28	n. d.	n. d.	.....	trace	214.0	724.0	304.0	21.40
	(d) Tap.....	10 28	n. d.	n. d.	0.5	.....	244.0	876.0	245.0	n. d.
	(e) Intake.....	10 28	n. d.	n. d.	0.5	trace	248.0	870.0	270.0	17.70
	(f) Intake.....	11 8	n. d.	n. d.	trace	trace	188.0	832.0	196.0	n. d.
	(g) Tap.....	11 8	n. d.	n. d.	trace	.....	198.0	811.0	236.0	n. d.
89	Chanute.....	11 13	0.064	0.070	4.0	0.005	28.0	145.0	73.0	1.65
90	Colby.....	11 1	0.086	0.064	.....	.....	10.0	380.0	207.0	5.10
91	Coffeyville:									
	Strawboard waste.....	11 19	1.090	3.400	trace	trace	40.0	3,495.0	1,901.0	n. d.
92	Everest: Well.....	10 12	n. d.	n. d.	8.0	trace	10.0	315.0	114.0	0.24
93	Ellsworth.....	10 13	0.018	0.016	4.0	.....	13.0	268.0	111.0	.....
94	Erie: M. K. & T. well.....	11 19	0.040	0.090	2.5	trace	114.0	844.0	292.0	1.16
95	Garden City:									
	(a) 1.....	10 21	0.070	0.090	0.7	trace	11.0	306.0	86.0	14.68
	(b) 2.....	10 21	0.068	0.116	0.1	trace	54.0	1,257.0	227.0	11.80
	(c) 3.....	10 21	0.070	0.084	4.0	0.080	61.0	1,221.0	214.0	15.10
96	Hays:									
	(a) Tap.....	10 23	0.020	0.074	6.0	.....	34.0	471.0	194.0	13.49
	(b) King well.....	10 23	0.064	0.085	.....	0.005	16.0	440.0	162.0	13.54
	(c) Tap.....	11 12	.....	.....	.....	.....	.....	.....	.....	.....
97	Herington: Wells:									
	(a) East of school.....	10 5	n. d.	n. d.	0.5	0.001	18.0	n. d.	n. d.	n. d.
	(b) West of school.....	10 5	n. d.	n. d.	18.0	0.003	51.0	n. d.	n. d.	n. d.
	(c) North of school.....	10 5	n. d.	n. d.	1.0	0.0005	35.0	n. d.	n. d.	n. d.

No.	Ctry.	Date, 1909.	N. in free NH ₃	N. in Alk. NH ₃	N. in NO ₂	N. in NO ₃	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed...
98	Herington: Tap*.....	10 14	0.084	0.088	0.5	0.005	188.0	896.0	276.0	11.08
99	Humboldt: Well.....	12 8	n. d.	n. d.	0.5	0.001	75.0	n. d.	n. d.	1.53
100	Horton: Well.....	10 14	n. d.	n. d.	3.0	0.010	42.0	656.0	162.0	26.79
101	Horton: Well.....	12 8	0.108	0.184	1.0	0.001	8.0	263.0	85.0	7.86
102	Lucas: Well.....	9 22	0.086	0.110	3.0	trace	94.0	614.0	193.0	1.08
103	Lucas: Wells:*									
	(a) 1 Austian.....	10 6								
	(b) 2 McRaney.....	10 6								
	(c) 3 Byres.....	10 6								
	(d) 4 Wing.....	10 6								
104	Lucas: Well*.....	10 27	0.048	0.084	4.0	trace	95.0	680.0	219.0	
105	Lansing: State Peniten- tary well.....	10 11	0.058	0.108	0.3		15.0	527.0	153.0	2.02
106	Marion: Proposed city supply well.....	9 17	0.044	0.690	12.0	trace	29.0	730.0	342.0	0.76
107	Salina: Well.....	11 8	n. d.	n. d.	1.0	0.005	17.6	n. d.	n. d.	n. d.
108	Wakefield: Well.....	9 29	0.054	0.092	0.3	trace	9.4	364.0	137.0	1.46
109	Wakefield: Proposed city supply well.....	10 26	0.044	0.084	0.7		33.0	442.0	156.0	0.09
110	Winfield: Well.....	11 19	n. d.	n. d.	1.0	0.010	12.0	n. d.	n. d.	8.50

n. d. Not determined. Too small sample.

* See mineral analyses, page 27.

DETAILS.

It will be noted from a glance at the foregoing tables that a number of determinations have been omitted, due to the receipt of too small a sample. We will state here that for a sanitary analysis health officers should send in at least one gallon of water, and before sending should confer with the director of the Water Survey as to methods of collection.

To get a satisfactory report upon a water as many details of location, source, surroundings and history as is possible to obtain should be sent with the water.

82. Burlington.—This water was collected and sent in by Dr. S. J. Manson.

The quantity of nitrites and nitrates present render the water suspicious. The surroundings should be investigated and care taken to allow no surface pollution.

83. Burns.—This water was collected and sent in by Dr. E. S. McIntosh.

The water was taken from a well at the house of a typhoid patient. As far as chemical analysis can show, this water is of doubtful character. Analysis shows an extraordinary amount of organic matter present.

84. Barnes.—(a) Collected from the city school well. (b) Hydrant water.

These waters were collected by the principal of the city school, Mr. L. Graham. Comparing these two waters, the hydrant water contains more mineral matter and more common salt than the school-well water; the hydrant water, however, contained less organic matter than the well water. On the whole, as far as chemical analysis can show, neither of these waters showed contamination at the time the analyses were made.

85. Caldwell.—(a) This is No. 1 of a series of waters collected and sent in by Dr. J. J. Sippy, health officer of Sumner county. The waters were taken from Fall creek, into which the Rock Island Railroad Company is emptying oil and refuse from washings at the roundhouse at Cald-

- well. Oil-burning engines are used on this division of the Rock Island railroad, and the sewage from the roundhouse leaves a scum of oil on the surface of the water, which renders it unfit for stock to drink. Sample (a) was taken above Messingill's ford, from the surface of the water. Sufficient oil to cover the surface of a 82-oz. bottle with a layer one-quarter inch thick was thus secured. (b) Sample was taken above sewer mouth; the water came over the ripples, and where the water and oil were as intimately mixed as is possible to obtain. There was a thin film of oil on the surface of the water in this bottle. (c) This sample was taken at Dillman's ford and showed a trace of oil on the surface. (d) This sample was taken at Baum's ford two and one-half miles east and two miles south of the sewer, and still showed a film of oil on the surface. (e) This sample was taken at the sewer mouth. The surface of the water in the bottle was covered with a film of oil one-sixteenth inch thick. (f) This sample was taken above the mouth of the roundhouse sewer, out of the Fall creek district. Comparison of the chlorine content of this water with the other five will show that the roundhouse sewage other than oil makes itself apparent.
86. Cherokee.—This water was sent in by the city council for mineral analysis, for which see page 27.
87. Caney.—These waters were sent in by W. F. Blewett, for the purpose of finding whether or not the sulfuric acid wastes from the oil refinery were contaminating the Caney supply. Sample (a) was taken from Birch creek, one-half mile from where it empties into the Caney river. By the time the refinery waste had reached this far, the free sulfuric acid had been used up and the water was neutral. (b) This water was taken from Birch creek at the junction of Birch creek and Lake creek. At this point the water was acid. For analysis, see page 27.
88. Caney.—(a) Intake of the city waterworks. (b) From mouth of Birch creek at the junction with the Little Caney river. (c) City hydrant water. (d) City hydrant water. (e) Intake of waterworks. (f) Intake of waterworks. (g) City hydrant. This series of waters was sent in by R. W. Bates, waterworks superintendent of Caney. Results show the Caney supply to be poor and inadequate to the demands of the town during low water.
89. Chanute.—This water was sent in by Mrs. H. P. Dunning.
90. Colby.—Proposed city supply. This water contains 19.58 parts per million SO_4 .
91. Coffeyville.—This is a sample of strawboard waste from the Coffeyville strawboard mill. This sample was collected and analyzed in hopes that some method of purification might be found. However, the purifying of this waste would be impracticable, as the sewage from the mill is greatly diluted by the Verdigris river. For analysis see page 27.
92. Everest.—This water was sent in by A. Scalapino. The sanitary analysis shows nothing abnormal.
93. Ellsworth.—This water was sent in by Doctor O'Donall. As far as chemical analysis can show, this seems to be a very good water. A small amount of ammonia, nitrates and nitrites indicate that the water contains less organic matter than is usually found.

94. Erie.—This water was sent by Burns & MacDonall, engineers, as a proposed city supply. This is a very hard water. It contains 260.66 parts per million of SO_4 .
95. Garden City.—These three waters were sent in by the waterworks committee: (a) A soft-water well 118 feet deep, and contains 76.7 parts per million of SO_4 , and has a soap hardness of 102.8 parts per million calcium carbonate. (b) This water is from the present city supply. It is a very hard water, and contains 625.16 per million of SO_4 , and has a soap hardness of 197.1 calcium carbonate. (c) A shallow private well very similar in character to the present city supply, but is high in nitrites and organic matter, which render the water suspicious. It contains 573.2 parts per million of SO_4 , and has a soap hardness of 214.2 parts per million of calcium carbonate. This is by far the worst water of the three.
96. Hays.—These samples were sent in by H. H. King. (a) City water. (b) Private well with three cesspools near. The high nitrites with no nitrates render the water suspicious. (c) This water was sent in by Dr. L. A. Marty, county health officer. It was to be tested for iron as ferrous sulfate, as some copperas had been introduced into cesspools near the present source of the city supply. There was no more iron or SO_4 in this sample than in 96 (a), which was examined three weeks previous.
97. Herington.—(a) (b) (c) These waters were sent in by Dr. Schyler Nichols. The samples are so small that it is impossible to give any definite opinion. They are from the school building, as indicated previously.
98. Herington.—This water was sent in by Carl Stronquist, superintendent waterworks. New test well for the city water supply. For analysis, see page 27.
99. Humboldt.—This water was sent in by Cochran & Schelman. This sample was too small to give a definite opinion.
100. Horton.—This water was sent in by J. W. Weaver. The high nitrites render this water suspicious.
101. Horton.—Sent in by Dr. A. S. Love. This water was taken from the city supply, which is furnished by a private company. The source of supply is a series of wells sunk at the edge of a pond made by a dam to catch the drainage from the hills. The water is of very doubtful character as to safety for city supply.
102. Lucas.—Sent in by D. C. Langly. This is the proposed source for city supply.
103. Lucas.—These waters were sent in to be examined for iron with reference to their desirability for city supply. (a) 14.4 parts per million iron and aluminium oxides. (b) 4.4 parts per million iron and aluminium oxides. (c) 5.2 parts per million iron and aluminium oxides. (d) Sample broken.
104. Lucas.—Proposed city supply.
105. Lansing.—State Penitentiary.
106. Marion.—This water was sent in by Burns & MacDonall, engineers, as proposed city supply.
107. Salina.—This water is from a well.
108. Wakefield.—This water was sent in by B. Y. Eustace. Nothing in the analysis indicates that this water is polluted.

109. Wakefield.—Proposed city supply.

110. Winfield.—This water was sent in by Drs. Schneider and Jacobia. The water is from a well at a country school. It was oily in odor and taste. High nitrites render the water suspicious.

MINERAL ANALYSES.

(Parts per Million.)

No. 86—Cherokee :

Sodium chloride.....	140.2
Calcium bicarbonate.....	86.2
Magnesium bicarbonate.....	172.5
Iron bicarbonate.....	32.4
Sodium bicarbonate.....	124.3
Calcium sulfate.....	139.7
Silica.....	8.2

No. 87—Caney :

	(a)	(b)
Total solids.....	640.0	987.0
Sulfate ion.....	227.0	565.0
Free sulfuric acid.....	neutral	196.0

No. 91—Coffeyville :

Total solids.....	3495.00
Fixed residue.....	1594.00
Loss on ignition.....	1901.00
Suspended solids.....	1350.00
Loss on ignition.....	600.00
Fixed residue.....	750.00
Iron and aluminium oxides.....	145.20
Calcium oxide.....	510.80
Magnesium oxide.....	39.28
Chlorine.....	40.00
Sulfate ion.....	.16
Reaction.....	neutral
Insoluble residue.....	575.00

No. 98—Herington :

Sodium chloride.....	310.2
Sodium sulfate.....	249.2
Calcium bicarbonate.....	371.9
Magnesium bicarbonate.....	176.4
Sodium bicarbonate.....	55.5
Iron bicarbonate.....	trace
Silica.....	11.0

Kansas was the first state to adopt a standard to control patent or proprietary medicines, and which has thus far been instrumental in suppressing a number of fake nostrums. The standard is as follows: "Proprietary medicinal preparations and similar medicinal products are required to conform in composition to the freshly prepared nondeteriorated article, and to conform to the professed standard of properties, quality and strength claimed for the preparation." Missouri has recently adopted the same standard.

NOTICE.

TOPEKA, KAN., January 27, 1910:

To Fruit Growers, Commission Merchants, and Retail Dealers:

With the approach of the berry season, attention is directed to section 11, chapter 264, Session Laws of 1909, which reads as follows:

"SEC. 11. Berries and small fruits, whenever sold in boxes, shall be sold in boxes containing a standard dry quart or dry pint, and if said boxes contain less than this amount the information must be given to the purchaser or such packages must be labeled with a statement of the net contents."

The fruit growers within the state are required to pack berries in full standard dry quart or dry pint boxes, or, if the common liquid quart box is used, to stamp or label same distinctly " $\frac{3}{4}$ quart," or the exact fraction thereof.

Berries grown and packed outside the state and packed in the common liquid quart boxes, when handled through the commission merchant, it being impractical to open crates for the purpose of marking the individual boxes, may be sold in unopened crates if the crate is distinctly labeled or stamped "This crate contains twenty-four three-fourths quart boxes." When received by the retail merchant he is required to stamp the individual boxes " $\frac{3}{4}$ quart," or the exact fraction thereof, before selling them.

The intent of the law is that the consumer shall either receive a full dry quart, or dry pint, or be informed by conspicuous label or stamp of the exact quantity received.

The department urges hearty coöperation on the part of all dealers in the enforcement of the law.

S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector.

The *Scientific American* says: The process for manufacturing high-grade ethyl alcohol from wood waste has been developed by the Standard Alcohol Company, of Chicago, at ten cents per gallon. The wood is digested in a machine performing the functions of a stomach; the starch is converted into sugar, pumped into fermenting tanks, brewer's yeast added, when the resulting fermentation converts the sugar into ethyl alcohol. This will release for food purposes millions of bushels of corn and barley which is now used in manufacturing alcohol.

Abraham Lincoln.

February is the month of great men and women—the birth-month of Washington, Lincoln, and Frances Willard. Lincoln was a Kentuckian by birth, rocked in the rough cradle of poverty in a little log cabin, unchinked, unplastered and scantily furnished; trained in the university of necessity; attending school twice in the neighborhood for a few weeks at a time, being compelled to walk four miles each way to do so; transplanted to Indiana to a home life of poverty, a poverty so great that the family lacked protection from the rain and cold. Out of such childhood grew the farm hand, the rail splitter, the flatboatman, the captain of the Black Hawk war, the country merchant, the country lawyer, the four times elected legislator, the representative in Congress, the candidate for the United States senate, and the war President.

Such in brief, says one, is the story of Abraham Lincoln, the great typical American, as in him were found in a preëminent degree the best features of our New World life—honesty and simplicity and truthfulness.

When Lincoln was a boy almost everybody drank and temperance had less advocates than at present. Among those who were working for temperance in that early day was "Old Uncle John," as he was called, who gathered the people together for meetings in the rough log schoolhouses of the sparsely settled communities in that section of the country. People came out of curiosity, but he often found little sympathy for his cause.

One long-to-be-remembered night he made his plea, ending with an invitation to come forward and sign the pledge. There was only one who moved, as the story goes. A tall and far from handsome boy got to his feet and came up the aisle. Even in that rough audience he made an ungainly appearance in his sadly outgrown clothes, coarse and too short in trousers and sleeves. But a hush fell on the rough men as that boy, with determination in his face, stooped to write the name "Abraham Lincoln" on the pledge.

The work of that night lives in history. Lincoln always attributed much of his success in life to his temperance principles, and years afterward, when as President of the United States he had the pleasure of entertaining "Old Uncle John" in the White House, he said to him: "I owe more to you than to almost any one of whom I can think. If I had not signed the pledge with you in the days of my youthful temptation I should probably have gone the way of a majority of my early companions who lived drunkards' lives and are now filling drunkards' graves."

The February Three.

Glad your visit 's come around
As the seasons vary;
Glad you brought your children, too,
Welcome, February!

Welcome to a weary world,
Often dull and stupid.
Howdy George, and Honest Abe?
Howdy, little Cupid?

Strange triumvirate are you,
Every one a splitter;
Cherry trees and rails and hearts
Make your names to glitter.

Come and make yourselves at home,
Holidays and laughter,
Stay not just one fleeting month
But the whole year after.

—McLandburgh Wilson.

State Board of Health Notes.

"A pair of unheavenly twins: the shallow well and the cesspool."

Alcohol is literally a toxin, being the by-product of the germs of fermentation.

Hotel inspection by county health officers and fire marshals for 1910 has been ordered.

Whooping-cough and measles kill twenty times as many Kansas people annually as smallpox.

Hotels doing business without certificates after March 1 will be obliged to answer to the courts.

The well and outhouses on the average farm are located with a view of convenience and not of sanitation.

Neglected suppurating ears and chronic sore eyes are like compound interest in the magnitude of the final results.

Over 100 new slaughterhouses have been built along sanitary lines the past two years, the result of "slaughterhouse inspection."

Spirits of niter must have been prepared within thirty days, and kept in a cool and dark place, if reliance is to be placed in its therapeutic value.

We are just beginning to see and appreciate the connection between inability to breathe through the nose and inability to see clearly right from wrong.

Are you reporting your cases of tuberculosis? If not, and you think you have a valid reason for not doing so, will you please write to the department and state your objection?

The fond parents who wantonly expose their child to a contagious disease of any kind, no matter how mild the epidemic, should have a guardian appointed, or be sent to Osawatomie.

Kansas is the only state having a standard for cereal sausage—four per cent of cereal only being allowed, and no greater percentage of water added than is contained in normal meat used in preparation.

Not a single sample of elixir of pepsin that has been examined at the drug laboratories of the State Board of Health at the School of Pharmacy at Lawrence has been found to have any appreciable digestive value.

Kansas was the first state to abolish the common drinking cup on railway trains and in the public schools. Five other states have since followed, the latest to join the procession being the young giant, Oklahoma.

Although the farthest removed from the seashore, Kansas was the first state to adopt a standard for oysters, and the investigations made by the food and drug division of the State Board of Health, through Food Analyst Professor Willard, and upon which these standards were based, are generally considered authoritative, and are used as a basis for similar standards by other states.

The State Board of Health expect to have their plans for the distribution of diphtheria antitoxin to the poor of the state completed by or soon after February 1. All towns of 500 or over, and the county seats, will have a depository for such distribution; blank applications will be furnished physicians through the county health officers and city health officers in cities of the first class.

Tuberculosis may be disseminated through a tubercular infected water supply; it has been demonstrated that the tubercle bacillus may live from one to twelve months in water. Therefore, the habit of a careless consumptive who spits on the ground near a well which may be polluted is as dangerous a practice as throwing the unsterilized discharges of a typhoid patient upon the ground near a well.

S-h-h-h.

My maw—she's upstairs in bed,
An' It's there wif her.
It's all bundled up and red—
Can't nobody stir;
Can't nobody say a word
Since It come to us.
Only thing 'at I have heard,
'Ceptin' all It's fuss,
Is S-h-h-h.

That there nurse she shakes her head
When I come upstairs.
"S-h-h-h" she sez—"at's all she's said
To me, anywheres.
Doctor—he's the man 'at brung
It to us to stay—
He makes me put out my tongue,
'Nen says "S-h-h-h" 'at way;
Jest "S-h-h-h."

I goed in to see my maw,
'Nen clumb on th' bed.
Was she glad to see me? Pshaw!
"S-h-h-h"—'at's what she said.
'Nen It blinked an' tried to see—
'Nen I runned away
Out to my old apple-tree,
Where no one could say
"S-h-h-h."

'Nen I lay down on the ground
An' say 'at I just wish
I was big. An' there's a sound—
'At old tree says, "S-h-h-h."
'Nen I cry an' cry an' cry
Till my paw he hears,
An' comed there an' wiped my eye
An' mop up th' tears—
'Nen sez "Sh-h-h-h."

I'm goin' to tell my maw 'at she
Don't suit me one bit—
Why d' all say "Sh-h-h-h" to me
An' not say "Sh-h-h-h" to It?

—Chicago Tribune.

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

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FEBRUARY, 1910.

VOL. VI.

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Do you take your life's work seriously?

Is it the "odor of sanctity" that pervades the unventilated church?

The only difference between the rut and the grave is the width and depth.—*Chalmers.*

Education without the spirit of the Christ but sharpens teeth and claw.—*Dr. S. S. Estey.*

You cannot burn the candle of physical vitality at both ends and keep the normal standards of bodily resistance necessary to health.

The man who is too busy to spend a short time each day to care for the machine that is driving his work—his body—is just the man who needs that care the most.

Every pedigreed animal in the state is carefully registered at an expense of from fifty cents to three dollars, yet the registration of the birth of a *babe*, a future citizen of the republic, was by the last legislature considered too expensive at twenty-five cents.

VITAL STATISTICS

Reported to the Kansas Board of Health for January, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTY.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State...total, January, 1910.....	2				182 127	23 18	2 1					4 1
Allen.....	0	0	0	0	2	1						0
Anderson.....	0	0	0	0	0	0						0
Atchison.....	0	0	0	0	0	0						0
Barber.....	0	0	0	0	0	0						0
Barton.....	0	0	0	0	0	0						0
Bourbon.....	0	0	1	0	0	0	1	0	2	0	0	0
Brown.....	2	1	1	0	2	0	11	0	0	0	4	0
Butler.....	2	2	0	0	0	0	0	0	0	0	16	0
Chase.....	1	0	0	0	0	0	0	0	0	0	0	0
Chautauque.....	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee.....	1	0	0	0	1	0	1	0	2	0	1	0
Cheyenne.....	0	0	0	0	0	0	0	0	0	0	0	0
Clark.....	0	0	1	0	0	0	0	0	0	0	0	0
Clay.....	0	0	0	0	0	0	0	0	0	0	0	0
Cloud.....	0	0	0	0	0	0	1	0	0	0	0	0
Coffey.....	2	0	1	0	0	0	0	0	0	0	20	0
Comanche.....	0	0	0	0	0	0	2	0	0	0	0	0
Cowley.....	2	2	5	0	4	0	9	0	0	0	1	0
Crawford.....	2	2	0	0	1	1	0	0	2	0	0	0
Decatur.....	0	0	0	0	0	0	0	0	11	0	0	0
Dickinson.....	0	0	0	0	0	0	0	0	4	0	0	0
Doniphan.....	0	0	0	0	0	0	5	0	0	0	0	0
*Douglas.....												
Edwards.....	0	0	0	0	0	0	2	0	0	0	0	0
Elk.....	0	0	1	0	0	0	2	0	0	0	0	0
Ellis.....	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	0	0	0	0	0	0	14	0	0	0
Finney.....	1	1	0	0	0	0	1	0	1	0	0	0
Ford.....	0	0	0	0	0	0	0	0	6	0	2	1
Franklin.....	0	0	1	0	0	0	2	0	0	0	26	0
Geary.....	1	0	0	0	0	0	0	0	2	0	0	0
Gove.....	0	0	0	0	2	0	0	0	0	0	0	0
Graham.....	1	0	0	0	0	0	0	0	20	0	0	0
Grant.....	0	0	0	0	0	0	0	0	0	0	0	0
Gray.....	0	0	0	0	0	0	2	0	18	0	0	0
*Grealey.....												
Greenwood.....	0	0	0	0	4	1	2	0	0	0	12	0
Hamilton.....	0	0	0	0	2	0	22	0	2	0	15	0
Harper.....	0	0	0	0	0	0	0	0	0	0	2	0
Harvey.....	0	0	0	0	3	0	0	0	0	0	15	0
Haskell.....	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman.....	0	0	0	0	0	0	0	0	0	0	0	0
Jackson.....	1	1	0	0	0	0	0	0	0	0	0	0
Jefferson.....	0	0	1	0	2	0	24	2	0	0	15	0
Jewell.....	1	1	1	1	0	0	0	0	27	0	0	0
*Johnson.....												
Kearny.....	0	0	1	0	0	0	0	0	1	0	0	0
Kingman.....	0	0	0	0	0	0	0	0	2	0	14	0
Kiowa.....	0	0	0	0	0	0	0	0	0	0	0	0
Labette.....	1	0	0	0	0	0	0	0	5	0	1	0
Lane.....	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth.....	0	0	0	0	0	0	2	0	0	0	0	0
Lincoln.....	0	0	0	0	0	0	0	0	0	0	0	0
Linn.....	2	2	2	0	0	0	2	1	0	0	0	0
Logan.....	0	0	0	0	0	0	0	0	2	0	0	0
Lyon.....	2	1	1	1	5	1	1	0	0	0	9	0
Marion.....	0	0	0	0	2	0	2	0	0	0	0	0
Marshall.....	0	0	0	0	0	0	15	1	0	0	0	0
McPherson.....	0	0	0	0	1	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	0	0	1	0	0	0	0	0
Miami	0	0	0	0	14	1	0	0	0	0	0	0
Mitchell	0	0	1	0	1	0	0	0	0	0	0	0
Montgomery	2	2	4	1	4	1	3	0	8	0	7	0
Morris	0	0	1	0	1	0	0	0	0	0	1	0
Morton	0	0	0	0	0	0	2	0	0	0	0	0
Nemaha	2	0	0	0	0	0	8	0	1	0	5	0
Neosho	0	0	1	1	1	0	1	0	1	0	74	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	2	0	0	0	0	0
Osage	8	2	1	0	4	0	15	0	11	0	8	0
* Osborne												
Ottawa	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee	2	2	0	0	0	0	0	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	8	0	0	0
Pottawatomie	0	0	0	0	0	0	0	0	0	0	5	0
Pratt	0	0	1	0	2	0	10	0	0	0	0	0
Rawlins	0	0	0	0	0	0	0	0	5	0	1	0
Reno	2	2	1	0	3	0	20	2	50	0	15	0
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	3	0	1	0	0	0
Riley	1	1	2	1	2	0	0	0	8	0	2	0
Rooks	0	0	0	0	1	0	0	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	5	0	2	0
Russell	0	0	1	0	8	0	3	0	1	0	1	0
Saline	4	2	1	0	0	0	0	0	0	0	7	0
* Scott												
Sedgwick	1	1	0	0	2	0	8	1	1	0	0	0
Seward	2	0	0	0	0	0	0	0	0	0	0	0
Shawnee	0	0	1	0	11	1	9	0	0	0	2	0
Sheridan	0	0	0	0	0	0	12	2	1	0	0	0
Sherman	1	1	0	0	0	0	1	0	0	0	0	0
Smith	8	0	0	0	7	0	0	0	2	0	0	0
Stafford	0	0	0	0	0	0	3	3	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	2	2	2	1	7	1	1	0	2	0	3	0
Thomas	0	0	5	0	0	0	3	0	1	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	9	2	0	0	0	0	0	0
Wallace	0	0	0	0	0	0	1	0	0	0	0	0
Washington	0	0	1	0	0	0	0	0	0	0	1	0
* Wichita												
Wilson	1	1	1	0	0	0	0	0	1	0	8	0
Woodson	0	0	0	0	0	0	0	0	25	0	1	0
Wyandotte	1	1	0	0	0	0	5	1	22	0	0	0
Cities :												
Fort Scott	1	1	2	0	0	0	0	0	0	0	0	0
Atchison	2	1	4	0	0	0	1	0	0	0	4	0
Coffeyville	4	3	1	0	1	0	1	0	11	0	5	0
Kansas City	10	10	26	5	48	10	43	1	39	0	56	0
Leavenworth	5	8	34	5	3	0	1	0	0	0	0	0
Parsons	0	0	0	0	4	0	0	0	0	0	6	0
Pittsburg	6	1	0	0	2	0	3	1	1	0	5	0
Topeka	6	6	1	1	15	2	7	0	8	0	25	0
Wichita	4	4	3	2	4	1	2	1	1	0	7	0
State Institutions.	192	0	0	0	0	0	0	0	0	0	0	0

* No reports.

The Spartan theory that the physically fit are alone worthy of Spartan citizenship finds its modern and humane application in the medical inspection of schools.

FOOD ANALYSES. No. XXVIII.

By Prof. E. H. S. BAILEY, PH. D., Chemist for the State Board of Health, and
Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

OLIVE OIL.

According to Leach, "Food Inspection and Analysis," 1909 edition, olive oil is derived from the fruit of the cultivated thornless olive tree, of which there are a great many varieties. The better grades of olive oil, suitable for table and medicinal purposes, possess a pleasant, bland taste, and a distinctive and agreeable odor, unmistakable in character for that of any other oil. Olive oil may be nearly colorless, a deep golden yellow, or a fine pale green. From Bulletin 77, Bureau of Chemistry, United States Department of Agriculture, "Olive Oil and Its Substitutes," it is learned that the average annual importation of olive oil during 1891 to 1901 was 258,000 gallons from France, 498,500 gallons from Italy, and 45,000 gallons from other sources. California oils are increasing in importance, and in time probably can supply the entire American market. They are usually of high grade. In a list of eighty-three commercial samples sixteen were found adulterated, of which two were California oils, six French and eight Italian oils.

The process of manufacture is very simple. In California the fruit is picked when ripe and dried either in the sun or by means of driers. It is then crushed in a mill and the oil extracted by a powerful press. The first oil coming from the press is called virgin oil, and is the highest grade of salad oil. The pulp left from the first operation is subjected to a much higher pressure to produce the second-pressing oil. As a rule, this is mixed with the "virgin oil." The pulp is now treated with hot water and pressed again, when a third-grade oil is produced, which is used for the table and also for lubricating fine machinery and for burning. The pulp still contains oily matter which is extracted with carbon disulphid, and used in making castile soap and in dyeing. In this country very little of this lower-grade product is made.

The oil from the different pressings is run into tanks with water and allowed to stand until the pulp and gummy matters settle out. The oil is drawn off, carefully filtered, and stored in a cool, dark place until ready to be bottled, as olive oil becomes rancid very quickly if exposed to light and heat.

Quoting from Leach again: "The most common adulterant of olive oil in this country is naturally cottonseed oil, which is often

substituted wholly for it. In Europe peanut oil is sometimes used both as an admixture and even as a substitute, since it possesses in itself a rather pleasant flavor, rendering it especially adapted for use as an adulterant. Other cheap oils used for this purpose are corn, mustard, poppyseed, rape, sesame and sunflower oil. The writer has also found in samples of alleged olive oil sold in Massachusetts, cocoanut oil and even fish oil."

In both Webster's International Dictionary and the U. S. Dispensatory sweet oil is given as a synonym of olive oil. It is thus seen that the general acceptation of the term sweet oil is that of olive oil.

In Notice of Judgment 133, it is laid down that, "the usual acceptation of the term 'salad oil' does not include cottonseed oil," and a package bearing the words, "This product is a compound of salad oil and imported olive oil," was held to be adulterated and misbranded and a fine was imposed by the court after a plea of guilty was entered. It is thus seen that any package bearing the label "salad oil" or "sweet oil" should contain olive oil only.

As Lewkowitsch states that green oils contain copper, all the green oils analyzed were accordingly tested for heavy metals, but no copper or other heavy metal was found.

TABLE OF OLIVE OILS.

No...	Refractive index at 15.5° C.....	Specific gravity at 15.5° C.....	Iodine num- ber.....	Halphen test.....	Villavechia test.....	Color.....	Indication...	Remarks.....
1326*	1.4708	0.9159	80.29	Negative.	Negative.	Green.	.....	Passed.
1327	1.4739	0.9218	104.79	Positive.	.....	.....	Wholly cottonseed oil.	Illegal.
1351*	1.4704	0.9165	82.88	Negative.	Negative.	Green.	.....	Passed.
1365	1.4701	0.9178	82.24	"	"	"	.....	"
1528*	1.4712	0.9173	81.62	"	"	"	.....	"
1748	1.4741	0.9252	105.60	Positive.	.....	.....	Wholly cottonseed oil.	Illegal.
1795	1.4742	0.9225	108.40	"	"	"	.....	"
2193	1.4800	0.9603	88.71	Faint.	.....	.....	Wholly castor oil.	Illegal.
2265*	1.4711	0.9162	82.88	Negative.	Negative.	Green.	.....	Passed.
5055	1.4711	0.9175	83.36	"	"	"	.....	"
7205*	1.4699	0.9156	82.79	"	"	Green.	.....	"
7249	1.4715	0.9168	82.60	"	"	"	.....	"
6270*	1.4715	0.9173	83.10	"	"	Green.	.....	"
7288	1.4713	0.9169	84.81	"	"	"	.....	"
7300	1.4718	0.9175	86.74	"	"	"	.....	"
7310	1.4711	0.9170	82.00	"	"	"	.....	"
7504	1.4708	0.9169	83.80	"	"	"	.....	"
7505	1.4705	0.9166	81.04	"	"	"	.....	"
7518	1.4708	0.9166	83.79	"	"	"	.....	"
7560	1.4705	0.9163	81.35	"	"	"	.....	"
7580	1.4708	0.9166	80.18	"	"	"	.....	"
7562	1.4740	.....	106.40	Positive.	"	.....	Wholly cottonseed oil.	Illegal.
8009	1.4739	0.9221	105.70	"	"	.....	.....	"

* Tested for heavy metals with negative results.

ADDITIONAL DATA TO ILLEGAL OLIVE OILS LISTED ABOVE.

No. 1327. Label, "Salad Oil, So-called Malaga Olive Oil Yellow." No manufacturer's name is available in this case. Retailer H. M. Bennett, Wilkesville. This oil upon analysis is found to be probably wholly cottonseed oil, and Notice of Judgment No. 133, shows that the term "salad oil" does not include cottonseed oil.

No. 1748. Label, "Olive Oil." Retailer, Olden Drug Store, Wichita. As the sample was taken from a shelf bottle labeled "Ol. Olive" only, manufacturer's name could not be obtained.

No. 1795. Label, "Oil, Puritan Salad." Jobber, Southwestern Drug Company, Wichita. Retailer, Steiger-Hazlett Drug Company, White Water. This oil upon analysis is found to be probably wholly cottonseed oil, and Notice of Judgment No. 133 shows that the term "salad oil" does not include cottonseed oil.

No. 2193. Label, "Liberty Bell Sweet Oil." Packed for Parker-Wilson Grocery Company, St. Joseph, Mo. Retailer, J. I. Taylor, Elwood. This oil upon analysis is found to be probably wholly castor oil, and it is probably a case of carelessness in dispensing.

No. 7562. Label, "Olive Oil." No manufacturer's or jobber's name could be found in connection with this product. Retailer, D. W. Herman, Ravanna. This oil upon analysis is found to be probably wholly cottonseed oil.

No. 8009. Label, "Nantucket Brand Salad Oil." Manufacturer, The Diamond Manufacturing Company, Kansas City, Mo. Retailer, Jos. Weiss & Son, Kansas City, Kan. This oil upon analysis is found to be probably wholly cottonseed oil, and Notice of Judgment No. 133 shows that the term "salad oil" does not include cottonseed oil.

I consider how I may exhibit my soul before the judge in a healthy condition. Wherefore, disregarding the honors that most men value, and looking to the truth, I shall endeavor to live as virtuously as I can; and when I die, to die so. And I invite all other men, to the utmost of my power, and you, too, I invite to this contest, which, I affirm, surpasses all contests here.—*Plato*.

Do not worry; eat three square meals a day; say your prayers; be courteous to your creditors; keep your digestion good; exercise; do not hurry; maybe there are other things that your special case requires to make you happy, my friend, but these, I reckon, will give you a good lift.—*Abraham Lincoln*.

DRUG ANALYSES No. XXVII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The present report from the drug laboratory includes the medicinal articles received from Inspectors Tilford and Deem during the past month, consisting of pharmaceutical preparations, chemicals and patent medicines. No. 4164, Insp. No. 2603, bismuth subnitrate, is a very unfortunate contamination, to say the least, and should require careful investigation as to the origin of the impurity found in the material.

In the present report is to be found an interesting showing of a very commonly prescribed pharmaceutical preparation, the elixir of iron, quinine and strychnine. Inspectors Tilford and Deem have collected samples of this preparation from different parts of the state, and the office of the Board of Health has requested a report upon these. This preparation, it is well known, is an official one, and when made by the standard United States Pharmacopœia formula is of a transparent greenish-yellow color. It has a specific gravity of about 1.0876, and should contain in 100 cc. 0.9025 of total alkaloid, of which 0.875 is quinine and 0.0275 is strychnine.

ELIXIR OF IRON, QUININE, AND STRYCHNINE.

Lab. No.	Insp. No.	Color.	Specific gravity.	Solid residue* from 100 cc. elixir.	Alkaloidal content from 100 cc. elixir.
		Normal† (official sample).....	1.0876	21.6520	0.898†
2299	3889	Normal (?).....	1.0400	18.8280	0.497
8382	3840	Normal (?).....	1.0436	18.2620	0.489
2495	3861	Normal (?).....	1.0960	25.4550	0.675
8482	3860	Amber, clear.....	1.0620	27.0450	0.614
2428	3887	Normal (?).....	1.0400	18.1800	0.555
2284	3674	Brown.....	1.1230	35.7750	0.885
8380	3838	Garnet.....	1.1660	34.9460	0.457
2517	4047	Green, cloudy.....	1.1114	30.1960	0.649
8374	8332	Garnet, ".....	1.1500	39.3380	0.340
8378	8331	Brown, ".....	1.1366	42.5320	0.670
2342	3732	Garnet.....	1.0760	21.5400	0.744
8404	3862	Normal (?).....	1.0390	20.1390	0.490
8386	8344	Deep green.....	1.0399	20.9970	0.510
8396	3854	Normal (?).....	1.0390	17.1430	0.449
8385	8343	Normal (?).....	1.0390	20.1880	0.466
2370	3760	Normal.....	1.0580	23.9030	0.535
8412	8870	Amber.....	1.1444	36.0460	0.848
8411	8869	Normal (?).....	1.0400	19.1560	0.500
2321	3711	Dark brown, cloudy.....	1.1288	31.1180	0.798

* Solid residue was obtained by evaporating and subsequently heating at 90° C. until residue was practically of constant weight.
† "Normal," official sample—light yellowish green, transparent.
(?) The question (?) indicates that the sample was nearly normal.
‡ In separating the alkaloids, the usual "washing-out process" was employed, ether and chloroform being used to extract the alkaloids from alkaline solutions. Washing was continued until the liquid ceased to yield alkaloid. The ether-chloroform solution was evaporated and the residue weighed. It will be seen that the preparation made in this laboratory according to the official formula, when assayed by us as above described, yielded 0.898 of total alkaloid—a loss of 4.5 milligrams in the 100 cc.

It should be understood that this preparation in Kansas should conform to the official formula, and any unreasonable deviation therefrom should be considered as illegal. Many of the preparations received at the laboratory are apparently from old stock. They bear the name of the manufacturing houses who should guarantee the preparation. Pharmacists who do not make this medicinal liquid themselves, but buy it ready made, should see to it that they have a guarantee as to its strength and purity.

The present report may be considered a preliminary notice of warning.

The twenty samples of this preparation show a lack of uniformity in composition, as will be seen from the accompanying table. It will also be noticed that very few of them come up to the required standard of alkaloidal strength.

Mr. G. N. Watson accompanies his report upon tinctures of gentian and calumba with the following remarks:

Thirteen samples of "Tincture of Calumba" have been examined during the past month, showing an average of 0.930 gm. of extractive in 100 cc. of tincture, and an average of 56 per cent of absolute alcohol. Samples Nos. 4032 and 4036, containing glycerin, were not included in taking the average of extractive. The color of the samples was very much the same (substandard) as those described in last month's report, the average color of the samples being yellowish to orange. The standard color (that is, the color of the preparation made strictly by the official process) is a dark red. As to the amount of extractive in the official tincture of calumba, our statement in the December report is borne out by further work, namely: That 2.5 gm. in 100 cc. of the preparation is about the standard amount from a carefully prepared tincture. Thus far, but one sample from the inspectors (No. 4108) has very closely approached this official standard.

Twenty-two samples of "Compound Tincture of Gentian" have been examined during the past month. The average alcoholic strength of these preparations was 49.4 per cent, and the average extractive was 3.8469 gm. in 100 cc. of tincture. A standard sample of compound tincture of gentian, prepared strictly by the official process in this laboratory, showed, by assay, a yield of 5.5 gm. of extractive in 100 cc. of tincture, and about 56.5 per cent of absolute alcohol.

TINCTURE OF CALUMBA.

Lab. No.	Insp. No.	NAME.	City.	Per cent alcohol.	Residue from 100 cc.
3947	2481	Cleaverdon Bros.....	Leavenworth ..	68.73	1.040
3950	2484	R. L. Igel.....	" ..	54.25	.512
3954	2488	Smith Bros.....	" ..	46.25	.688
3986	2490	Chas. F. Rebsamen.....	" ..	63.50	1.182
3955	2499	Mehl & Schott.....	" ..	62.50	.514
4089	2509	H. B. Brombacker.....	Ottawa ..	48.00	.992
4042*	2512	Earl Hill.....	" ..	68.25	12.528
4048	2518	E. H. Thompson.....	" ..	45.90	.512
4083*	2533	Oxley Drug Co.....	Wichita.....	70.20	26.408
4083	2533	Frazier Drug Co.....	" ..	.....	.314
4102	2510	Thos. Arnold.....	" ..	35.75	1.345
4105	2515	W. B. Harrison.....	" ..	60.75	.918
4108†	2576	Oscar R. Bissantz.....	" ..	58.50	2.314

*Contain glycerin. †Standard.

COMPOUND TINCTURE OF GENTIAN.

Lab. No.	Insp. No.	NAME.	City.			
3984	2468	P. J. W. Ratliff	Tonganoxie.	48.85	3.615	Brown.
3952	2496	Smith Bros.....	Leavenworth ..	54.10	4.832	Dark red.
3955	2489	Chas. F. Rebsamen.....	" ..	56.75	3.784	"
3954	2496	Mehl & Schott.....	" ..	58.15	5.048	"
3978	2424	Ross Porter.....	Neodesha.....	43.00	3.534	Brown.
3983	2429	Caney Pharm	Caney.....	46.80	4.222	Dark red.
3985	24317	P. H. Lindley.....	Havana.....	48.00	3.318	Brown.
3989	2435	L. J. Haines.....	Galena.....	.....	5.288	"
3990	2436	Ralph C. Schellack	" ..	52.40	4.412	"
3995	2441	L. Lay.....	Weir City.....	47.50	1.851	Orange.
3996	2442	W. J. Allen.....	" ..	62.00	3.318	Reddish brown.
3991	2443	Andrew A. Jolly.....	Scammon.....	46.25	3.092	Dark red.
4001	2447	Getman & Frame.....	Columbus.....	49.75	4.062	"
4002	2448	Burroughs Bros.....	Chilcopee.....	51.00	3.672	Reddish brown.
4006	2452	E. N. Bailey	Eureka.....	48.00	4.444	Dark red.
4012	2464	C. H. Selig.....	El Dorado.....	54.86	1.480	Dark orange.
4013	2465	R. H. Julian.....	" ..	45.10	5.933	Brown.
4014	2466	Palace Drug Store.....	" ..	42.00	3.890	Reddish brown.
4018	2470	Riley Drug Store.....	Arkansas City..	53.00	5.076	Dark red.
4019	2471	E. C. Dye.....	" ..	45.90	4.008	"
4050	2520	E. H. Thompson.....	Ottawa.....	36.50	3.977	"
4058	2526	J. E. Youngberg.....	" ..	49.75	1.956	Orange.

Lab. No. 3229, Insp. No. 2115. Label, "Fitt's Laxative Cold Tablets." Prepared for the Fitt's Manufacturing Company, Pueblo, Colo. Declared to contain 19 grams of opium to the ounce. Found to contain opium, quinine, capsicum and cascara.

Lab. No. 3510, Insp. No. 2196. "Distilled Witch Hazel." H. G. Hedrick, Fanning, retailer. Contains 8.45 per cent alcohol. Declared to contain 10 per cent alcohol.

Lab. No. 3490, Insp. No. 2176. "Tuna Tonic Pills." California Good Health Company, Louisville, Ky. Sugar-coated pills weighing 0.55 gm. Ash, 39.1 per cent. Contains strychnine, large amount of iron, and small amount of aluminum, magnesium and calcium salts.

Lab. No. 3541, Insp. No. 2219. "Considine's Double OOK."

J. E. Considine, Atchison. A remedy for coughs, colds, sprains, cuts and burns. Declared to contain 3 minims of alcohol and $1\frac{1}{2}$ minims of chloroform in one teaspoonful. Found to contain ammonia, a fixed oil, and small amounts of the volatile oils of sassafras and turpentine.

Lab. No. 3882, Insp. No. 2423. "Po. Nux Vomica." Forline & Utt, Downs. Microscopically O. K. Sample too small for assay.

Lab. No. 3915, Insp. No. 2456. "Bar-Ben." "Nerve Tonic and Blood Purifier." Ash, 30.4 per cent. Contains phosphate of iron, a calcium salt and strychnine.

Lab. No. 3925, Insp. No. 2466. "Essence of Peppermint." Abdallah Pharmacy, Leavenworth. Found to contain 6.99 cc. of oil in 100 cc. of essence.

Lab. No. 3936, Insp. No. 2470. "Essence of Peppermint." Dr. C. H. Case, Basehor. Found to contain a trace of oil and 50.9 per cent of added water. Adulterated.

Lab. No. 3937, Insp. No. 2471. "Tr. of Iodine." Dr. C. H. Case, Basehor. Found to contain 7.2 per cent of iodine and 4.8 gms. potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 3943, Insp. No. 2477. "Spt. of Camphor." Chas. Gish, Baling. Found to contain 9.16 per cent of camphor.

Lab. No. 3944, Insp. No. 2478. "Ferruginous Pills" (Blaud's). Manufactured by Eli Lilly & Co., Indianapolis, Ind. Cleverdon Bros., Leavenworth, retailers. Pills weigh about 5 grs. and contain 1 gr. of carbonate of iron.

Lab. No. 3945, Insp. No. 2479. "Ferruginous Pills" (Blaud's). Manufactured by Schieffeln & Co., New York. Cleverdon Bros., Leavenworth, retailers. Declared to contain ferri sulph. $1\frac{1}{2}$ grs. and potassium carb. $1\frac{1}{2}$ grs. Found to contain 0.042 gm. of carbonate of iron. Passed.

Lab. No. 3946, Insp. No. 2480. "Po. Nux Vomica." Microscopically, O. K. Sample too small for assay.

Lab. No. 3968, Insp. No. 2502. "Essence of Peppermint." Chas. Curry, Easton, retailer. Found to contain 10.9 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 3994, Insp. No. 8440. "Essence of Peppermint." T. L. Bennet, Weir City. Found to contain 9.65 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4022, Insp. No. 8474. "Peerless Comp. Tr. of Iodine." Manufactured for Ranney-Davis Mercantile Company, Arkansas City, by Thompson-Taylor Spice Company, Chicago. Found to

contain 1.1 per cent of iodine, 1.56 gms. of potassium iodide and 62.8 per cent of added water in 100 cc. of tincture. Adulterated.

Lab. No. 4023, Insp. No. 8475. "U. S. P. Spirits of Nitre" (Peerless). Packed for the Ranney-Davis Mercantile Company, Arkansas City, by the Thompson-Taylor Spice Company, Chicago. Sample is put up in transparent bottles, loosely corked, is decidedly acid, and contains 1.32 per cent of ethyl nitrite. Adulterated.

Lab. No. 4024, Insp. No. 8476. "Peerless Ess. of Peppermint." Prepared for the Ranney-Davis Mercantile Company, Arkansas City, by the Thompson-Taylor Spice Company, Chicago. Found to contain 2.62 cc. of oil and 40.1 per cent of added water in 100 cc. of essence. Adulterated.

Lab. No. 4025, Insp. No. 8477. "Jamaica Ginger" (Peerless). Manufactured for the Ranney-Davis Mercantile Company, Arkansas City, by the Thompson-Taylor Spice Company, Chicago. Contains alcohol 32 per cent, added water 54.5 per cent, capsicum, and considerable sediment. Adulterated.

Lab. No. 4041, Insp. No. 2511. "Elixir Potassium Bromide." Found to contain 15.3 gms. of potassium bromide in 100 cc. of elixir.

Lab. No. 4046, Insp. No. 2516. "Elixir Potassium Bromide." J. P. Miller & Co., Ottawa. Found to contain 17.14 gms. in 100 cc. elixir. Passed.

Lab. No. 4051, Insp. No. 2521. "Precipitated Sulphur." E. H. Thompson, Ottawa. Examined for adulteration. Passed.

Lab. No. 4049, Insp. No. 2519. "Tr. of Iodine." E. H. Thompson, Ottawa. Found to contain 6.25 gms. of iodine in 100 cc. of tincture, and potassium iodide was absent. Adulterated.

Lab. No. 4053, Insp. No. 2523. "Tr. of Iodine." C. L. Cowdery, Ottawa. Found to contain 1.47 gms. of iodine in 100 cc. of tincture, and potassium of iodide was absent. Adulterated.

Lab. No. 4054, Insp. No. 2524. "Ess. of Peppermint." C. L. Cowdery, Ottawa. Found to contain 3.4 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4056, Insp. No. 2526. "Ess. of Peppermint." J. E. Youngberg, Ottawa. Found to contain 4.5 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4057, Insp. No. 2527. "Tr. of Iodine." J. E. Youngberg, Ottawa. Found to contain 1.3 gms. of iodine in 100 cc. of tincture, and potassium iodide was absent. Adulterated.

Lab. No. 4060, Insp. No. 2530. "Tr. of Iodine." J. R. Gardi-

ner, Wichita. Found to contain 4.11 gms. of iodine in 100 cc. of tincture, and 1.35 gms. of potassium iodide. Adulterated.

Lab. No. 4076, Insp. No. 2546. "Elixir of Potassium Bromide." Gus Saur, Wichita. Found to contain 18.9 gms. of potassium bromide in 100 cc of elixir. Above standard.

Lab. No. 4084, Insp. No. 2554. "Elixir of Potassium Bromide." The Frazier Drug Company, Wichita. Found to contain 17.1 gms. of potassium bromide in 100 cc. of tincture. Passed.

Lab. No. 4088, Insp. No. 2558. "Elixir Potassium Bromide." The Wichita Drug Company, Wichita. Found to contain 15.9 gms. of potassium bromide in 100 cc. of elixir.

Lab. No. 4095, Insp. No. 2565. "Elixir Potassium Bromide." Glenn Drug Company, Wichita. Found to contain 20.6 gms. of potassium bromide in 100 cc. of elixir. Above standard.

Lab. No. 4107, Insp. No. 2577. "Lac Sulphur." Oscar Bisantz, Wichita. Examined for adulteration. Passed.

Lab. No. 4110, Insp. No. 2580. "Lac Sulphur." The Southwestern Drug Company, wholesalers, Wichita. Sample is guaranteed by the Southwestern Drug Company under national and Kansas food and drugs acts, No. 2696. Ash from sample, 48.89 per cent, composed of calcium sulphate. Adulterated.

Lab. No. 4111, Insp. No. 2581. "Cream of Tartar." The Southwestern Drug Company., wholesalers, Wichita. Examined for adulteration. Passed.

Lab. No. 4113, Insp. No. 2583. "Rochelle Salts." The Southwestern Drug Company, wholesalers, Wichita. Examined for adulteration. Passed.

Lab. No. 4112. "The Columbia Stock Powder." Sample sent in by Mr. Deacon. Found to contain Glauber's salts and charcoal.

Lab. No. 4113. "Powdered Opium" (P. & W.). Sample analyzed by request of Brown's Drug Store, Winfield. Total ash, 10.4 per cent; insoluble ash (sand), 5.45 per cent.

Lab. No. 4148, Insp. No. 8519. "Tablet Triturates of Strychnine Nitrate." The Shelly Drug Company, Wichita, retailers. Manufactured by the Lohman-Vincent Company, Lafayette, Ind. Determined amount of strychnine nitrate. Passed.

Lab. No. 4152, Insp. No. 8523. "Citrine Ointment." The Ideal Pharmacy, Wichita. Preparation is darker than official, evidently due to age. Dispensed in ointment jar. Passed.

Lab. No. 4163. "Silex. For the Stomach." Manufactured by Dr. Jay Smith, Wichita. Silex is put up in capsules, the contents weighing about 1.3 gms. Dose, two capsules before each meal and

one at bedtime. Sillex is composed largely of sand (98.5 per cent) with a little capsicum and bicarbonate of sodium.

Lab. No. 4167, Insp. No. 8536. "U. S. P. Spt. of Nitre" (Standard). Manufactured by the Thompson-Taylor Spice Company, Chicago. Passed.

Lab. No. 4168, Insp. No. 8537. "U. S. P. Spt. of Nitre" (Standard). The Thompson-Taylor Spice Company, Chicago. Put up in transparent one-ounce bottles, well corked. Contains 4 per cent ethyl nitrite. Passed.

Lab. No. 4176, Insp. No. 2587. "Peroxide of Hydrogen." Prepared by G. H. Fralick, wholesale barber supplies, Wichita. Contains 9.4 volumes of oxygen; 0.02 gm. of residue from 20 cc.; slight excess of acidity. Passed.

Lab. No. 4180, Insp. No. ——. "Tr. of Iodine." C. E. Potts Drug Company, Wichita. Sample contains 6.97 gms. of iodine and 6.2 per cent of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4187, Insp. No. 2598. "Precipitated Sulphur." C. E. Potts Drug Company, Wichita. Examined for adulteration. Passed.

Lab. No. 4188, Insp. No. 2599. "Washed Sulphur." C. E. Potts Drug Company, Wichita. Examined for adulteration. Passed.

Lab. No. 4207, Insp. No. 9169. "Cream of Tartar" (Pa Jones brand). Packed for Manhattan Wholesale Grocery Company, Manhattan. Examined for adulteration. Passed.

Acute Anterior Poliomyelitis.

Up to the present time there have been eighty-two cases of anterior poliomyelitis reported to the State Department of Health during the present epidemic, which first made its appearance in Decatur county, in August. The epidemic seems to be about over, although there are occasional cases reported from widely separated districts.

Many letters have been received from physicians and laymen over the state requesting literature descriptive of the symptomatology of the disease, and suggestions for treatment. In response to this request, the following typical or usual clinical picture, as witnessed in the Kansas epidemic, is herewith submitted:

The onset of the disease is usually sudden or explosive in character, characterized by marked gastric disturbance, with pain and vomiting; usually obstinate constipation—you think of acute indigestion. Shortly following vomiting, or coincident with it, there are severe head pains, with often a noticeable rigidity of neck

muscles, and you begin to think of meningitis; palpation over lower abdomen and over spine, particularly the lumbar region, in most cases will elicit pain and tenderness. Temperature records 101 degrees to 104 degrees F.—coated tongue, foul breath.

Usually, within twenty-four to thirty-six hours after the onset of the acute symptoms, there is a beginning motor paralysis of one or more of the extremities—usually the lower—and where but one side is involved it is more often the right side. There is usually a hypersensitive condition of the paralyzed areas, which are more pronounced over the extensors, with the characteristic foot-drop or wrist-drop as the case may be. In the rapidly fatal cases there is a progressive and rapidly ascending paralysis, involving in turn the upper extremities, the neck, face, throat, and finally the muscles of respiration.

In the cases that do not prove fatal the acute symptoms subside in from three to ten days; the temperature and pulse are practically normal, the tongue cleans and the appetite returns, but the patient seems weak and anemic and the paralysis continues and often deepens.

In the more favorable cases the paralysis begins to improve within a week, and continues to gradually improve until complete recovery. In the majority of these cases there is a slight improvement in the paralysis until, after several weeks or months at most, no further improvement is noted, and the case remains permanently crippled.

Dr. L. Kerr, of Brooklyn, who has had a large experience in the treatment of these cases as consulting physician, writes the following letter suggestive of the treatment given during the epidemic which prevailed there during the past summer, which is herewith submitted for the readers of the BULLETIN:

“I am in receipt of your letter of the 7th inst., and I hasten to outline briefly what has proved to us the most successful line of treatment. My position in the affected district was a peculiar one, and in that I am used in consultation by practically every man in that section, and therefore occupy an unusual position and relationship to them. This allowed me to take the liberty of advising some definite line of treatment and also afforded me the opportunity to follow the results obtained.

“In the presence of the epidemic, all cases of indefinite illness in children under five years, accompanied by fever and associated with soreness or pain about the limbs, were treated as possible cases of anterior poliomyelitis.

“A child showing such symptoms was immediately placed in a hot pack and kept there until reaction was complete. This was

done irrespective of the rise in temperature. . At the same time the drinking of frequent and copious amounts of warm water was encouraged, even if it resulted in vomiting. The bowel was emptied immediately with a hot enema and this immediately followed by a single large dose of castor oil. The child was then put to bed and ice applied to the spine, being kept quite constantly over the lumbar region. Diet was restricted to fluids, and rest, mental as well as physical, was enforced. The child was kept from lying upon the back (to avoid pressure on the spine).

"I am convinced that this line of treatment was effective in the limitation of paralysis and of its prevention.

"It was almost impossible to estimate what benefit was derived from the use of drugs, and yet we advocated them on theoretical grounds, and each child received full doses of belladonna and ergot. How much real influence they exerted it is difficult to say.

"After the occurrence of paralysis, the belladonna and ergot was a part of the treatment. Absolute rest in bed and upon the sides was insisted upon. The diet was fluid, and water was given freely. Tepid baths were given every twelve hours. The bowel was kept active with calomel. Regular and intelligent massage of the affected muscles was instituted as soon as paralysis was detected, and continued at eight-hour intervals. The lubricant used was cocoa butter. This was continued as long as there was muscle tenderness, then the child was gradually allowed about. Electricity was forbidden until it could be demonstrated that there was no nerve tenderness.

"If I have failed to make the methods used clear to you, write me again; I am at your service.

"Our study of bacteriology has not proven anything. Personally, I am convinced that we will not find much to help us in fluid obtained by lumbar puncture, but will eventually through blood examinations.

Cordially yours,

(Signed) LEGRAND KERR, M. D."

A complete history of the Kansas epidemic will appear in a later issue of the BULLETIN.

State Board of Health Notes.

No tubercle bacillus—no consumption.

The vacuum-cleaner process for the home is a great step forward in house sanitation.

Plenty of pure water inside and outside, with God's pure fresh air all the time, is worth more than a barrel of pills and a bale of plasters.

The purpose of the public and private schools should be more than teaching the "3 R's"; they should make useful and healthy citizens as well as educated ones.

“Make Good.”

Make good.
Cut out “if,” “could” and “should.”
And start in to saw wood.
You can still have the best
Things in life like the rest
Of the men who’ve achieved
Just because they’ve believed
In themselves. You’re deceived
If you think fortune comes
With a rattle of drums
And a fanfare of state
To hand yours on a plate.
That is n’t the way
That she visits to-day.
You must get out and rustle and bustle and hustle;
You need all your muscle, for you’ve got to tussle.
Plunge into the fight,
Hit to left and to right,
And keep crashing and smashing.
Don’t let up on your striking
Till things meet your liking.
For God’s sake stop bawling—
Instead, do some mauling.
It makes the world bitter
To look at a quitter;
Fate scowls when she sees
A grown-up on his knees.
A man with his health
Is a mine jammed with wealth
Full of unexplored lodes.
Why, the freckle-backed toads
Have the sense to keep jumping—
And here you are frumping!
Come now, strike your gait—
It is n’t too late.
There’s no such thing as fate!
Drop that fool talk of “luck,”
Get a grip on your pluck,
And buck.
Begin
To grin
And win.

—Herbert Kaufman, in *Everybody’s*.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 3.

MARCH, 1910.

VOL. VI.

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Five things absolutely essential to good health and high bodily resistance to disease:

Pure air.

Pure food.

Pure water.

Work.

Freedom from harrowing mental care.

There is just as much sanitary sense and reason in reducing the normal amount of food required for the body as to keep it on half or quarter rations of pure air by keeping all of the windows closed. Open up!

Frequent headache is not always due to eye strain; it may be due to imperfect (or lack of) ventilation in the home.

Five per cent of school children have defective hearing.

VITAL STATISTICS

Reported to the Kansas Board of Health for February, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

									Smallpox.		Measles.	
									Cases.	Deaths.	Cases.	Deaths.
									280 224	0 0	1846 250	14 1
Allen	4	3	0	0	2	2	5	0	2	0	85	1
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	1	1	0	0	0	0	1	0	1	0	0	0
*Barber	2	2	0	0	0	0	0	0	0	0	12	0
Barton	1	1	0	0	0	0	0	0	0	0	2	0
Bourbon	1	1	0	0	0	0	4	0	0	0	0	0
Brown	1	1	0	0	1	0	1	0	2	0	0	0
Butler	2	1	0	0	0	0	1	0	0	0	20	0
Chase	2	1	0	0	0	0	1	0	0	0	2	0
Chautauqua	2	1	1	1	4	0	2	0	2	0	1	0
Cherokee	0	0	0	0	0	0	0	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	1	1	0	0	1	0	2	0	0	0	1	0
Coffey	0	0	0	0	0	0	2	0	0	0	20	0
Cornanche	0	0	0	0	0	0	0	0	0	0	5	0
Cowley	2	1	0	0	2	0	4	0	0	0	2	0
Crawford	2	2	0	0	1	1	1	1	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	7	0	4	0
Dickinson	0	0	0	0	0	0	0	0	7	0	5	1
Doniphan	2	2	1	0	1	1	4	0	0	0	2	0
Douglas	3	3	1	1	4	0	6	2	1	0	2	0
Edwards	0	0	0	0	0	0	5	0	0	0	0	0
Elk	0	0	1	0	0	0	1	0	0	0	0	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	0	0	4	0	2	0
Finney	1	1	0	0	0	0	2	0	0	0	1	0
Ford	0	0	0	0	1	0	7	0	1	1	1	0
Franklin	4	2	0	0	0	0	0	0	0	0	100	2
Geary	0	0	0	0	1	0	0	0	0	0	0	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	1	1	0	0	0	0	2	0	7	0	0	0
Grant	0	0	0	0	0	0	0	0	0	0	2	0
Gray	0	0	0	0	0	0	0	0	7	0	6	0
*Greeley	0	0	0	0	0	0	2	0	0	0	4	1
Greenwood	0	0	0	0	0	0	0	0	0	0	0	0
Hamilton	0	0	0	0	0	0	0	0	1	0	4	0
Harper	0	0	0	0	0	0	0	0	4	0	4	0
Harvey	0	0	0	0	0	0	0	0	0	0	54	0
Haskell	0	0	0	0	0	0	0	0	0	0	1	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	2	0
Jackson	2	2	0	0	0	0	0	0	4	0	10	0
Jefferson	1	1	0	0	1	1	2	0	2	0	1	0
Jewell	0	0	0	0	0	0	0	0	0	0	0	0
Johnson	0	0	0	0	71	0	4	0	0	0	0	0
Kearny	1	1	0	0	0	0	0	0	0	0	0	0
Kingman	1	1	5	2	0	0	6	0	11	0	3	0
Kiowa	0	0	0	0	0	0	1	0	0	0	0	0
Labette	1	1	2	0	1	0	1	0	4	0	20	0
Lane	0	0	0	0	19	3	0	0	0	0	0	0
Leavenworth	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	1	1	0	0	0	0	0	0	0	0	0	0
Linn	0	0	0	0	1	0	4	2	0	0	0	0
*Logan	0	0	0	0	7	0	2	0	0	0	26	0
Lyon	0	0	0	0	0	0	4	0	0	0	0	0
Marion	0	0	0	0	0	0	4	0	0	0	0	0
Marshall	2	2	0	0	1	1	4	2	0	0	1	0
McPherson	1	1	0	0	4	1	5	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Continued.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
											Cases...	Deaths.
Meade.....	0	0	0	0	0	0	0	0	0	0	0	0
Miami.....	1	1	1	1	0	0	0	0	0	0	0	0
Mitchell.....	0	0	1	0	0	0	8	1	0	0	0	0
Montgomery.....	4	1	2	0	1	0	2	0	70	0	50	2
*Morris.....	0	0	0	0	0	0	2	0	0	0	0	0
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	0	0	0	0	0	0	0	0	0	0	35	0
Nemah.....	0	0	0	0	0	0	2	0	0	0	191	0
Ness.....	0	0	0	0	0	0	0	0	22	0	0	0
Norton.....	0	0	0	0	0	0	0	0	2	0	0	0
Osage.....	2	2	0	0	2	0	11	0	12	0	0	0
Osborne.....	7	0	0	0	0	0	8	0	0	0	2	0
Ottawa.....	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee.....	0	0	0	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	5	0	0	0
Pottawatomie.....	0	0	0	0	3	0	1	0	0	0	3	0
Pratt.....	0	0	1	0	2	0	21	0	1	0	8	0
Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
Reno.....	0	0	1	0	3	0	8	0	28	0	36	0
Republic.....	0	0	2	0	0	0	1	0	2	0	0	0
Rice.....	1	0	0	0	0	0	0	0	7	0	0	0
Riley.....	0	0	0	0	2	0	5	0	1	0	2	0
Rooks.....	0	0	0	0	0	0	0	0	2	0	0	0
Rush.....	0	0	0	0	0	0	0	0	0	0	1	0
Russell.....	1	0	0	0	0	0	0	0	3	0	1	0
Saline.....	2	0	0	0	0	0	2	0	0	0	3	0
Scott.....	0	0	0	0	0	0	0	0	8	0	0	0
Sedgwick.....	0	0	0	0	0	0	2	0	0	0	0	0
Seward.....	1	0	0	0	0	0	0	0	0	0	0	0
Shawnee.....	0	0	0	0	5	0	1	0	0	0	12	0
Sheridan.....	0	0	0	0	0	0	15	3	0	0	0	0
Sherman.....	0	0	0	0	0	0	0	0	0	0	2	0
Smith.....	1	0	0	0	1	0	1	0	2	0	0	0
Stafford.....	1	0	0	0	0	0	3	0	0	0	14	0
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	2	2	0	0	1	0	10	0	0	0	22	0
Thomas.....	0	0	0	0	0	0	0	0	0	0	0	0
*Trego.....	0	0	0	0	5	0	0	0	0	0	0	0
Wabunsee.....	0	0	0	0	0	0	0	0	0	0	1	0
Wallace.....	0	0	0	0	0	0	0	0	0	0	2	0
Washington.....	0	0	1	0	0	0	2	0	0	0	1	0
Wichita.....	0	0	0	0	0	0	0	0	0	0	15	0
Wilson.....	1	1	1	0	2	0	1	0	1	0	1	0
Woodson.....	0	0	1	0	0	0	1	0	3	0	1	0
Wyandotte.....	1	1	1	1	0	0	3	2	0	0	0	0
Cities:												
Fort Scott.....	0	0	2	0	0	0	0	0	0	0	23	0
Atchison.....	0	0	0	0	0	0	0	0	0	0	24	0
Coffeyville.....	2	2	0	0	1	1	1	0	0	0	11	0
Kansas City.....	11	11	28	8	28	1	28	1	20	0	206	1
Leavenworth.....	1	1	27	1	4	0	2	0	1	0	5	0
Parsons.....	1	1	0	0	0	0	0	0	0	0	418	0
Pittsburg.....	2	2	0	0	0	0	5	3	1	0	2	0
Topeka.....	0	0	0	0	6	0	9	0	11	0	132	0
Wichita.....	4	4	0	0	6	0	7	0	0	0	42	0
State Institutions.....	187	1	0	0	0	0	0	0	0	0	20	0

* No reports.

The following county health officers are delinquent on monthly report for February:

Barber county, Dr. Hardin Gilbert.
 Greeley county, Dr. A. Z. Szwischer.
 Logan county, Dr. A. Stroup.
 Morris county, Dr. W. E. Crawford.
 Trego county, Dr. Frank Lindsey.

DRUG ANALYSIS No. XXVIII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The drug laboratory report for the present month includes a great variety of pharmaceutical preparations and proprietary articles. An interesting list of pepsin preparations is also presented. It should be noted that the peptic strength of most of these preparations is considerably below standard. If the cc. preparations were of standard strength, there should not be left more than 1 cc. of undigested albumin after the process of digestion had been completed. It is to be noted that many of these samples examined leave a residue from 31 to 41 cc. of undigested albumin, indicating an entire loss of peptic power.

Our inspectors were asked to ascertain the condition of the stock in the drug stores of Tincture of Kino. The reports of the inspectors show that 50 per cent of the druggists report none of this preparation in stock. 16 per cent of the preparations on hand are in a solidified or gelatinous condition, and about 32 per cent of them as they should be, liquid. It is very evident from the inspectors' reports that tincture of Kino is very seldom if ever prescribed. This is rather important data as it shows that here is a preparation which might, so far as the state of Kansas is concerned, be left out of the Pharmacopœia.

Compound Tincture of Gentian. A number of samples of this tincture have been examined. It should again be stated that this preparation should yield of solid extract, 5.5 grms. and of alcohol 56.5 per cent.

Tincture of Calumbo. This preparation should contain 2.5 grms. of solid extract in 100 cc. of the preparation and 56 per cent of alcohol.

Extract of Ginger. Occasionally we find the preparation sold by the druggists as extract of ginger. Pharmacists should be reminded that in case of extract of ginger, the Kansas law requires that each 100 cc. should contain the alcoholic soluble matters from not less than 20 grms. of ginger. If a low grade of alcohol is used in making this preparation, it is fair to assume that this flavoring extract does not meet the requirements of the food and drugs law. In cases where the extract is sold simply for flavoring, and where the alcoholic percentage is low, our examinations thus far indicate that such preparations are substandard, but to what extent they are

below standard will require further investigation. The evidence thus far seems to be that the oleoresin (the valuable part of ginger) is deficient.

Lac Sulphur. Lac sulphur should correspond to the Pharmacopœial standard for precipitated sulphur, but it should be noted that some of the samples sent in for examination contain from 4 to 50 per cent of calcium sulphate. It is true that the term "lac sulphur" has been employed by the trade to refer to an impure precipitated sulphur containing calcium sulphate, which is always an admixture and an adulterant; if sulphuric acid is employed in precipitating the sulphur from solutions instead of hydrochloric acid (the proper acid), this impurity is sure to be present.

ASSAY OF PEPSIN PREPARATIONS.*

Insp. No.	Lab. No.	NAME.	Acidity.	Color.	Undigested albumin.
4078	2548	Elixir pepsin N. F.	Low.	Normal.	Less than 1 cc.
4179	2590	Glycero pepsin.	Low.	Pale yellow.	1 cc.
4127	8499	{ Elixir; calisaya, pepsin and bismuth.	Low.	Brown, cloudy.	33 cc.
4074	2544	Wine pepsin.	Low.	Normal.	32 cc.
4044	2514	{ Elixir; pancreo, pepsin and bismuth.	None.	Reddish brown.	34 cc.
4182	8506	{ Elixir; compound pepsin powder.	Low.	Normal.	335 cc.
4043	2513	Elixir; lactated pepsin.	Low.	Red.	8 cc.
4088	2508	Essence of pepsin.	Low.	Normal.	1.5 cc.
4146	8518	Essence of pepsin.	Low.	Normal.	2 cc.
4104	2574	Essence of pepsin.	Low.	Normal.	Less than 1 cc.
4090	2560	Elixir; lactated pepsin.	Low.	Red.	32.5 cc.
4185	8507	{ Elixir; pepsin, bismuth and calisaya.	Low.	Reddish brown.	40.5 cc.
4037	2507	Elixir; lactated pepsin.	Low.	Red cloudy.	31.5 cc.
4120	8492	Elixir; pepsin and bismuth.	None.	Normal and ppt.	40 cc.
4045	2515	Elixir; pepsin and bismuth.	Low.	Normal.	35 cc.
4237	2626	Elixir; pepsin and bismuth.	Low.	Normal.	41 cc.
4134	8506	Lime juice and pepsin.	High.	Reddish Brown.	39 cc.
4091	2561	Fluid pepsin.	Low.	Pale yellow.	2 cc.
	5000	Pepsin tablets.	None.	Contained 0.0501 gm. pepsin in each tablet.	

* As a standard, a freshly made preparation is employed. A quantity of this is taken, as should practically digest the albumin used in the test. Not more than 1 cc. should remain undigested.

Lab. No. 2730, Insp. No. 1702. "Wahl's Stomach and Kidney Exercisers." Manufactured by W. A. Wahl, Morrisonville, Ill. Geo. H. May, Wichita, retailer. Found to contain powdered

licorice root, carbonate of iron and 37.7 per cent of sodium bicarbonate. Ash, 55.52 per cent.

Lab. No. 2887, Insp. No. 1869. "Cold and Grippe Tablets." Manufactured by the Peoria Pharmacal Co., Peoria, Ill. Examined for acetanilid. Passed.

Lab. No. 3548, Insp. No. 2226. "Wine of Antimony." J. M. Bowan & Co., Atchison, Kan. Found to contain one-tenth the required amount of potassium antimony tartrate. The preparation is dark and contains considerable sediment. Below standard.

Lab. No. 3568, Insp. No. 2246. "Wine of Antimony." C. O. Meyers, Atchison, Kan. Found to contain one-tenth the required amount of potassium antimony tartrate. Below standard.

Lab. No. 3926, Insp. No. 7635. "Pepper." F. Menown Mfg. Co., Kansas City, Mo. Ash, 6.29 per cent; total ether extract, 8.88 per cent; nonvolatile ether ext., 8.25 per cent; volatile extract, 0.63 per cent. Ash, higher than the average. Volatile matter, lower than the average.

Lab. No. 3938, Insp. No. 2472. "Spirit of Camphor." I. J. McCalman, Piper, Kan., retailer. Found to contain 19.52 per cent camphor. Small amount of sediment present. Above standard.

Lab. No. 4059, Insp. No. 2529. "Tr. Gentian Co." J. R. Gardner, Wichita, Kan. Found to contain alcohol, 47.5 per cent; 3.028 gm. of extractive in 100 cc. of the tincture.

Lab. No. 4062, Insp. No. 2532. "Tr. Gentian Co." Oxley Drug Co., Wichita. Found to contain 4.049 gm. of extractive in 100 cc. of tincture, 34.75 per cent of alcohol.

Lab. No. 4065, Insp. No. 2535. "Tr. Arnica." Santa Fe Drug Co., Wichita. Found to contain 60.9 per cent. of alcohol. Passed.

Lab. No. 4068, Insp. No. 2538. "Bay Rum." Wm. M. Swentzell, Wichita, retailer. Found to contain 48.75 per cent alcohol.

Lab. No. 4073, Insp. No. 2543. "Tr. Gentian Co." Gus Saur, Wichita. Found to contain 3.892 gm. of extractive in 100 cc. of preparation, and 47.5 per cent of alcohol.

Lab. No. 3975, Insp. No. 8421. "Tr. Ginger U. S. P." F. C. Oehler, Cherryvale. Contains alcohol 91.75 per cent.

Lab. No. 4079, Insp. No. 2547. "Tr. Gentian Co." J. W. Cookson Drug Co., Wichita. Contains 3.638 gm. of extractive in 100 cc. of preparation and 46.25 per cent. of alcohol.

Lab. No. 3980, Insp. No. 8426. "Tr. Ginger." Pierce Bros. & Eson, Neodesha. Found to contain 94 per cent alcohol.

Lab. No. 3984, Insp. No. 8430. "Tr. Ginger." J. A.

Winkler, Caney. Found to contain 78.75 per cent alcohol. Adulterated.

Lab. No. 3986, Insp. No. 8432. "Ess. Jamaica Ginger." Wilson & Winkler, Caney. Alcohol declared, 93 per cent. Found to contain 75 per cent alcohol. Adulterated and misbranded.

Lab. No. 3987, Insp. No. 8433. "Ess. Jamaica Ginger." T. V. Campbell, Galena. Found to contain 83.25 per cent alcohol. Adulterated.

Lab. No. 3988, Insp. No. 8434. "Tr. of Ginger." City Drug Store, Galena. Sample contains 60.75 per cent alcohol. Artificially colored. Adulterated.

Lab. No. 3991, Insp. No. 8437. "Tr. of Ginger." Opera House Pharmacy, Galena. Found to contain 90.75 per cent alcohol. Passed.

Lab. No. 3992, Insp. No. 8438. "Tr. Ginger." The Rexell Store, Galena. Found to contain 93 per cent alcohol. Passed.

Lab. No. 3993, Insp. No. 8439. "Tr. Ginger." J. P. Brumfield, Galena. Found to contain 91.25 per cent alcohol. Passed.

Lab. No. 3998, Insp. No. 8444. "Ess. Jamaica Ginger." Markham's Pharmacy, ——. Contains 91.5 per cent of alcohol. Passed.

Lab. No. 4005, Insp. No. 8451. "Tr. Ginger." Dr. Swan, Gas. Contains 93 per cent alcohol. Passed.

Lab. No. 4011, Insp. No. 8463. "Concentrated Ext. Jam. Ginger." Wm. Y. Miller, El Dorado. Contains 91.75 per cent alcohol. Passed.

Lab. No. 4016, Insp. No. 8468. "Tr. Jam. Ginger." W. N. Harris, Arkansas City. Found to contain 92.25 per cent alcohol. Passed.

Lab. No. 4027, Insp. No. 8479. "Ess. Jam. Ginger." J. M. Harter, Winfield. Contains 89.75 per cent alcohol. Passed.

Lab. No. 4030, Insp. No. 8482. "Ess. Jam. Ginger." Plagmann & Doane, Winfield. Contains 91 per cent alcohol. Passed.

Lab. No. 4066, Insp. No. 2536. "Tr. Ginger (Jamaica)." The Santa Fe Drug Co., Wichita. Contains 94.2 per cent alcohol.

Lab. No. 4069, Insp. No. 2539. "Tr. Jamaica Ginger." Wm. M. Swentzell, Wichita. Alcohol declared, 93 per cent. Contains 93.75 per cent alcohol. Passed.

Lab. No. 4115, Insp. No. 2585. "Sp. Camphor." Murphy's Pharmacy, Wichita. Contains 8.12 per cent camphor. A slight black sediment is present.

Lab. No. 4119, Insp. No. 8491. "Ess. of Peppermint." Davis

Drug Co., Wichita. Contains 9.32 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4122, Insp. No. 8494. "Bay Rum." Lease & Gibbon, Wichita. Contains 65.2 per cent alcohol.

Lab. No. 4125, Insp. No. 8497. "Tr. Gentian Co." Doctor Jordan's Drug Store, Wichita. Contains 3.878 gm. in 100 cc. of the preparation, and 40.75 per cent alcohol.

Lab. No. 4149, Insp. No. 8520. "Calomel & Santonin Tablets." Declared to contain santonin, $\frac{1}{4}$ gr.; calomel, $\frac{1}{8}$ gr. They were found to contain santonin, $\frac{1}{2}$ gr., calomel, $\frac{1}{4}$ gr.

Lab. No. 4151, Insp. No. 8522. "Fl. Ext. of Hydrastis." Shelley Drug Co., Wichita. Found to contain 0.94 per cent Hydrastin, which is about one-half of the U. S. P. standard.

Lab. No. 4153, Insp. No. 8524. "Tr. Ginger." The Ideal Pharmacy, Wichita. Found to contain 94.3 per cent alcohol. Preparation is not very pungent.

Lab. No. 4154, Insp. No. 8525. "Bay Rum." J. S. Chism, Wichita. Contains 47.95 per cent alcohol.

Lab. No. 4156, Insp. No. 8527. "Ess. of Peppermint." Van Werden's Pharmacy, Wichita. Contains 1.63 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4158, Insp. No. 8529. "Spt. of Camphor." Makin Eye Drug Co., Parsons. Contains 9.7 gms. camphor in 100 cc. of preparation. Passed.

Lab. No. 4159, Insp. No. 8530. "Ess. of Peppermint." Makin Eye Drug Co., Wichita. Contains 3.37 cc. of oil in 100 cc. of essence and 21.6 per cent of added water. Adulterated.

Lab. No. 4161, Insp. No. 8532. "Ess. Jamaica Ginger." Smith Drug Co., Wichita. Found to contain 90.5 per cent alcohol. Passed.

Lab. No. 4162, Insp. No. 8533. "Spt. Camphor." Smith Drug Co., Wichita. Contains 8.7 per cent. camphor. A slight sediment is present.

Lab. No. 4166, Insp. No. 8535. "Ess. Jamaica Ginger." Phil. Aherne, jr., Wichita. Contains 93.25 per cent alcohol.

Lab. No. 4169, Insp. No. 8538. "Spt. Camphor." Manufactured by the Thompson & Taylor Spice Co., Chicago. Alcohol declared, 90 per cent. Contains 10.23 per cent camphor and 8.4 per cent added water. Adulterated and misbranded.

Lab. No. 4170, Insp. No. 8539. "Solution of Carbolic Acid." Manufactured by the Thompson & Taylor Spice Co., Chicago.

Declared to contain 10 per cent of phenol. Found to contain 9.9 per cent phenol. Passed.

Lab. No. 4171, Insp. No. 8540. "Taylor's Concentrated Ess. Jamaica Ginger." Thompson & Taylor Spice Co., Chicago. Alcohol declared, 40 per cent. Found to contain 40 per cent alcohol. Contains capsicum and considerable sediment. Adulterated.

Lab. No. 4172, Insp. No. 8541. "Murray's Reliable Ext. of Ginger." J. H. Murray, Wichita. Claimed to be for flavoring ice cream, jelly, pastry, etc. Found to contain 70.5 per cent alcohol.

Lab. No. 4173, Insp. No. 8547. "Ess. of Peppermint." Murray & Co., Wichita. Contains 1.3 per cent of oil and 25 per cent of added water. Adulterated.

Lab. No. 4174, Insp. No. 8543. "Ground Cinnamon." J. H. Murray, Wichita. Ash, 3.47 per cent. Total extract, 1.95 per cent. Nonvolatile extract, 1.74 per cent. Volatile, 0.19 per cent. Volatile extract is very low. Nonvolatile extract lower than average.

Lab. No. 4175, Insp. No. 2586. "Borated Talcum." Examined for adulteration. Passed.

Lab. No. 4177, Insp. No. 2588. "Ess. Jamaica Ginger." W. O. Goodin, Wichita. Contains 90.27 per cent alcohol.

Lab. No. 4181, Insp. No. 2592. "Ess. of Peppermint." C. E. Potts Drug Company, Wichita. Alcohol declared, 86 per cent. Contains 9.33 per cent of oil. Passed.

Lab. No. 4183, Insp. No. 2594. "Spt. of Camphor." C. E. Potts Drug Company, Wichita. Contains 10.15 per cent of camphor. Passed.

Lab. No. 4185, Insp. No. 2596. "Bay Rum." C. E. Potts Drug Company, Wichita. Contains 53.2 per cent alcohol.

Lab. No. 4186, Insp. No. 2597. "Carbolic Acid." C. E. Potts Drug Company, Wichita. Contains 93.02 per cent of phenol.

Lab. No. 4192, Insp. No. 9141. "Ground Black Pepper." W. W. Gavitt Chemical Company, Topeka. Ash, 6.23 per cent. Total extract, 9.74 per cent. Nonvolatile, 9.08 per cent. Volatile extract, 0.66 per cent. Ash is higher than average. Volatile oil lower than average. Microscope reveals no foreign admixture.

Lab. No. 4194, Insp. No. 9143. "Ground Cloves." W. W. Gavitt Chemical Company, Topeka. Ash, 7.16 per cent. Total ether extract, 18.1 per cent. Volatile extract, 11.41 per cent. Nonvolatile extract, 6.69 per cent. Ash is higher than average. Volatile extract lower than average. Microscopical examination shows considerable amount of clove stems.

Lab. No. 4195, Insp. No. 9144. "Ground Batavia Cassia Cin-

namon." W. W. Gavitt Chemical Company, Topeka. Ash, 4.78 per cent. Total ether extract, 2.42 per cent. Nonvolatile extract, 1.55 per cent. Volatile, 0.87 per cent. Volatile extract is below minimum. Nonvolatile extract below average. Microscopical examination discloses no added adulterant.

Lab. No. 4196, Insp. No. 9145. "Ground Batavia Cassia Cinnamon." W. W. Gavitt Chemical Company, Topeka. Ash, 3.95 per cent. Total ether extract, 2.84 per cent. Nonvolatile extract, 1.95 per cent. Volatile extract, 0.89 per cent. Volatile extract slightly below minimum. Nonvolatile extract lower than average. Microscopical examination discloses no added adulterant.

Lab. No. 4197, Insp. No. 9146. "Ground White Pepper." W. W. Gavitt Chemical Company, Topeka. Ash, 2.64 per cent. Total ether extract, 7.66 per cent. Nonvolatile extract, 7.03 per cent. Volatile, 0.63 per cent. Volatile extract is lower than average. Microscope reveals no foreign admixture.

Lab. No. 4198, Insp. No. 9147. "Powdered Jamaica Ginger." W. W. Gavitt Chemical Company, Topeka. Ash, 4.67 per cent. Total ether extract, 4.45 per cent. Nonvolatile extract, 3.3 per cent. Volatile, 1.05 per cent. Volatile extract lower than average. Microscope reveals no foreign admixture.

Lab. No. 4199, Insp. No. 9161. "Pa Jones' Ginger." Manhattan Grocery Company, retailers. Thompson & Taylor Spice Company, Chicago, manufacturers. Ash, 4.88 per cent. Total ether extract, 5.76 per cent. Nonvolatile extract, 4.72 per cent. Volatile extract, 1.04 per cent. Volatile extract lower than average. Microscope reveals no foreign admixture.

Lab. No. 4200, Insp. No. 9162. "Pa Jones' Sage." Manhattan Wholesale Grocery Company, Manhattan. Thompson & Taylor Spice Company, Chicago. Ash, 9.23 per cent. Total ether extract, 11.66 per cent. Nonvolatile, 10.81 per cent. Volatile, 0.85 per cent. Microscope reveals no foreign admixture.

Lab. No. 4201, Insp. No. 9163. "Pa Jones' Pepper." Manhattan Wholesale Grocery Company, Manhattan. Thompson & Taylor Spice Company, Chicago. Ash, 5.68 per cent. Total ether extract, 8.02 per cent. Nonvolatile ether extract, 7.5 per cent. Volatile extract, 0.52 per cent. Volatile extract lower than average. Nonvolatile extract lower than average. Microscope reveals no foreign admixture.

Lab. No. 4202, Insp. No. 9164. "Pa Jones' Mustard." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by the Thompson & Taylor Spice Co., Chicago. Ash, 5.86 per cent. Total

ether extract, 19.3 per cent. Nonvolatile extract, 19.25 per cent. Volatile extract, 0.05 per cent. Microscope reveals no foreign admixture.

Lab. No. 4203, Insp. No. 9165. "Pa Jones' Cinnamon." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by the Thompson & Taylor Spice Co., Chicago. Ash, 4.99 per cent. Total ether extract, 2.3 per cent. Nonvolatile extract, 1.8 per cent. Volatile extract, 0.5 per cent. Volatile is below minimum. Nonvolatile extract lower than average. Examined microscopically, the stone cells and starch grains were found to be larger and the bast fibers more numerous than in ordinary cinnamon.

Lab. No. 4204, Insp. No. 9166. "Pa Jones' Black Pepper." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Ash, 6.82 per cent. Total ether extract, 8.43 per cent. Nonvolatile extract, 7.68 per cent. Volatile extract, 0.74 per cent. Microscope reveals no foreign admixture. Ash higher than average. Volatile oil lower than average.

Lab. No. 4205, Insp. No. 9167. "Pa Jones' Allspice." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Ash, 4.74 per cent. Total ether extract, 8.8 per cent. Nonvolatile extract, 6.19 per cent. Volatile extract, 2.61 per cent. Volatile extract is low. Microscope reveals no foreign admixture.

Lab. No. 4206, Insp. No. 9168. "Pa Jones' Cloves." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Total ether extract, 19.62 per cent. Ash, 6.73 per cent. Nonvolatile, 5.5 per cent. Volatile, 14.12 per cent. Ash higher than average. Volatile extract lower than average. Examined microscopically. Clove stems and mother of cloves were detected.

Lab. No. 4209, Insp. No. 9171. "Pa Jones' Cinnamon." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Ash, 3.96 per cent. Total ether extract, 2.87 per cent. Nonvolatile extract, 2.04 per cent. Volatile, 0.83 per cent. Volatile extract is below minimum. Examined microscopically. Stone cells were larger and bast fibers more numerous than in ordinary cinnamon.

Lab. No. 4210, Insp. No. 9172. "Pa Jones' Sage." Manhattan Wholesale Grocer Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Ash, 9.02 per cent. Total ether extract, 12.71 per cent. Nonvolatile extract, 11.6 per cent. Volatile extract, 1.11 per cent. Microscope reveals no foreign admixture.

Lab. No. 4211, Insp. No. 9173. "Pa Jones' Mace." Manhattan Wholesale Grocery Co., Manhattan. Manufactured by Arbuckle Bros., Chicago. Ash, 2.79 per cent. Total ether extract, 39.92 per cent. Nonvolatile extract, 32.68 per cent. Volatile extract, 7.24 per cent. Ash higher than average. Examined microscopically. Found to be slightly moldy.

Lab. No. 4219, Insp. No. —. "Tr. Iodine." Red Cross Pharmacy, Edgerton. Contains 25 25 gm. of iodine to 100 cc. of tincture and 15.57 gm. of potassium iodide. Above standard.

Lab. No. 4220, Insp. No. 2609. "Tincture of Arnica." Red Cross Pharmacy, Edgerton. Contains 46.4 per cent of alcohol. Passed.

Lab. No. 4221, Insp. No. 2610. "Powdered Alum." Red Cross Pharmacy, Edgerton. Faxon & Gallagher, jobbers. Examined for adulteration. Passed.

Lab. No. 4222, Insp. No. 2611. "Spt. of Camphor." E. E. Armstrong, Gardner. Contains 8.34 per cent of camphor.

Lab. No. 4223, Insp. No. 2612. "Tr. Calumbo." E. E. Armstrong, Gardner. Contains 44.65 per cent alcohol, and 2.5 gms. of extractive in 100 cc. Sample contains some glycerine; has a yellow color. Below standard.

Lab. No. 4224, Insp. No. 2613. "Powdered Alum. (For technical use.)" E. E. Armstrong, Gardner. Contains some dirt; otherwise satisfactory. Loss on ignition, 46.1 per cent.

Lab. No. 4225, Insp. No. 2614. "Lac Sulphur." E. E. Armstrong, Gardner. Ash, 10.32 per cent (calcium sulphate.) Adulterated.

Lab. No. 4226, Insp. No. 2615. "Ess. Jamaica Ginger." Viaduct Pharmacy, Kansas City. Contains 93 per cent of alcohol. Passed.

Lab. No. 4227, Insp. No. 2616, "Ess. of Peppermint." Viaduct Pharmacy, Kansas City. Declared to contain 85.5 per cent of alcohol. Preparation is artificially colored, contains only a trace of oil, and has 48.07 per cent of added water. Adulterated and misbranded.

Lab. No. 2617, Insp. No. 4228. "Powdered Alum." Viaduct Pharmacy, Kansas City. McPike Drug Co., jobbers. Examined for adulteration. Passed.

Lab. No. 4229, Insp. No. 2618. "Ess. of Peppermint." J. T. Pindell, Wellsville. Manufactured by Faxon & Gallagher, Kansas City. Contains 4.05 cc. of oil in 100 cc. of essence, and 22.4 per cent of added water. Adulterated.

Lab. No. 4233, Insp. No. 2622. "Ess. of Peppermint." De Soto Drug Store, De Soto. Contains 9.65 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4234, Insp. No. 2623. "Spt. of Camphor." De Soto Drug Co., De Soto. Contains 9.66 per cent of camphor. Passed.

Lab. No. 4235, Insp. No. 2624. "Burnt Alum." B. C. Culp, De Soto. Examined for adulteration. Passed.

Lab. No. 4239, Insp. No. 2628. "Lao Sulphur." Homer White, Eudora. Ash, 41.4 per cent (calcium sulphate). Adulterated.

Lab. No. 4240, Insp. No. 2629. "Eau de Quinine Hair Tonic." J. C. Smith Barber Supply and Cutlery Co., Leavenworth. Warranted to contain extra large amount of quinine. Found to contain 0.02 gm. in 100 cc. and 25 per cent of alcohol.

Lab. No. 4242, Insp. No. 2631. "Adora." A dressing for the hair. J. C. Smith Barber Supply Co., Leavenworth. Contains fixed and volatile oil and 25 per cent of alcohol.

Lab. No. 4243, Insp. No. 2632. "Rose Borated Taloum Powder." Brown & Smith Barber Supply Co., Leavenworth. Contains 4.3 per cent of boric acid.

Lab. No. 4246, Insp. No. 2635. "Alcohol." W. N. Kelsey, Linwood. Faxon & Gallagher, jobbers, Kansas City, Mo. Found to be of official strength. Passed.

Lab. No. 4248, Insp. No. —. Labeled "Glycerin." J. E. Fitzgerald, Weskan. Dry Climate Drug Company, Denver, Colo. Sample contains 93½ per cent alcohol.

Lab. No. 4251, Insp. No. 2638. "Elixir Potassium Bromide." The Kaiser Pharmacy, Ottawa. The preparation is turbid, has a bitter almond flavor. Contains 17.9 grms. of potassium bromide in 100 cc. of the elixir.

Lab. No. 4252, Insp. No. 2639. "Tr. of Iodine." C. L. Becker, Ottawa. Contains 6.55 grms. iodine and 4.77 grms. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4253, Insp. No. 2640. "Spt. of Nitre." C. L. Becker, Ottawa. Contains 3.63 per cent ethyl nitrite. Passed.

Lab. No. 4254, Insp. No. 2641. "Spt. of Camphor." C. L. Becker, Ottawa. Contains 9.73 per cent of camphor. Passed.

Lab. No. 4256, Insp. No. 2643. "Elixir Potassium Bromide." S. H. Lucas, Ottawa. Contains 17.7 grms. of potassium bromide in 100 cc. of the elixir. Passed.

Lab. No. 4258, Insp. No. 2645. "Elixir Potassium Bromide." F. A. Robbins, Council Grove. Contains 18.9 grms. potassium bromide. Above standard.

Lab. No. 4263, Insp. No. 2650. "Spt. of Chloroform." C. L. Stocks, Bushong. Sample is not spirits of chloroform, but is a poor medicated water. Contains sediment. Misbranded.

Lab. No. 4264, Insp. No. 2651. "Acidum Nitrohydrochloricum. Dil." Dr. Chester L. Stocks, Bushong. Passed.

Lab. No. 4269, Insp. No. 2656. "Smith's Ext. Jam. Ginger Compound." C. D. Smith Drug Company, St. Joseph, Mo. Declared to contain 50 per cent of alcohol. Found to contain 50 per cent alcohol. Capsicum is present.

Lab. No. 4271, Insp. No. 2658. "Spt. of Camphor." J. W. Fleming & Son, Enterprise. Contains 12.68 per cent of camphor.

Lab. No. 4274, Insp. No. 2660. "Concentrated Ess. Jamaica Ginger." Prepared by James F. Ballard, St. Louis, Mo. R. P. Pierce, Woodbine, retailer. Declared to contain alcohol 80 per cent. Found to contain 80 per cent alcohol.

Lab. No. 4275, Insp. No. 2662. "Tr. of Iodine." L. S. Sargent, Junction City. Contains 6.65 grms. of iodine and 4.52 grms. potassium iodide in 100 cc. of tincture.

A Correction.

In the January issue of the BULLETIN under the heading of "Beverages," number 7616, cherry cider, and number 7618, peach cider, both were branded illegal and the statement made that they were manufactured by the C. E. Potts Drug Company, of Wichita, Kan. Upon investigation we find this to have been an error, as these imitation ciders were manufactured by Drake Brothers, of Ness City, who had purchased the materials from which they were manufactured from the C. E. Potts Drug Company. The charge against Drake Brothers, of Ness City, Drug Company. In justice to the ad to make this correction.

of the weights of the druggists of a drug inspectors of the State Board. One-third of the weights were not permitted under the weights and condemned. Eight prescription graduates met the same fate.

THE FREE DISTRIBUTION OF DIPHTHERIA ANTITOXIN.

The free distribution of diphtheria antitoxin for the poor of Kansas is now an accomplished fact. Distributing stations have been selected in every town or city of over 500 inhabitants, and requisition blanks have been distributed to every physician in the state whose name and address appears in the Directory of the American Medical Association.

Owing to our lack of funds we were unable to establish a station in every town or at every drug store in every town, so we have had to be satisfied with our present plan as being the best possible under the circumstances. Physicians who have not received requisition blanks can obtain the same from this department. It is understood that this distribution is only for the poor of the state who are unable to purchase the same. Distributors are permitted to sell of the stock at the usual prices, in which instance a settlement direct with the manufacturer is required on the usual terms and prices of other antitoxin. The following distributing stations have been selected:

ALLEN COUNTY.

Reynolds Drug Store, Iola.
Waters & Dansforth, La Harpe.
S. R. Swan, Gas.
F. A. Cooksey, Humboldt.
W. E. North, Moran.

ANDERSON COUNTY.

W. J. Lane, Garnett.
The Rou Drug Co., Colony.

ATCHISON COUNTY.

J. F. Ritner, Atchison.
W. V. Ingham, Atchison.
Ebert & Co., Effingham.

BARBER COUNTY.

Kiowa Drug Co., Kiowa.

BARTON COUNTY.

Hooper Drug Co., Great Bend.
H. C. Arnold, Ellinwood.
Hoisington Drug Co., Hoisington.
Francis & Heymer, Pawnee Rock.
Campbell Mer. Co., Claflin.

BOURBON COUNTY.

J. S. Cunnings, Bronson.
Edward Dorsey, Fulton.

BROWN COUNTY.

Chris Sauter, Horton.
T. Stevens, Hiawatha.
S. T. Parker, Robinson.
U. S. Davis, Morrill.

BUTLER COUNTY.

J. W. Staiger, White Water.
J. B. Carlile, Leon.
P. E. Holmes, Douglass.
C. H. Selig, El Dorado.
J. A. Grant, Augusta.

CHASE COUNTY.

L. B. Breese, Elmdale.
W. B. Hilton, Cottonwood Falls.

CHAUTAUQUA COUNTY.

H. R. Fish, Peru.
P. M. Whitney, Cedarvale.

CHEROKEE COUNTY.

C. E. Bartlett, Columbus.
L. J. Haines, Galena.
W. J. Allen, Weir City.
Burke Bros. Drug Co., West Mineral.
R. M. Markham, Scammon.
A. P. Kane, Baxter Springs.

CHEYENNE COUNTY.

G. E. Dunn, St. Francis.

CLARK COUNTY.

Dodge & Fuller, Ashland.

CLAY COUNTY.

Fallington & Hold, Clay Center.

CLOUD COUNTY.

J. S. Flemming, Miltonvale.
Layton & Neilson, Concordia.
E. Bechard, Clyde.

COFFEY COUNTY.

W. J. Briggs, Burlington.
The Moore Pharmacy, Le Roy.

COMANCHE COUNTY.

Curran and Holcomb, Coldwater.

COWLEY COUNTY.

E. M. Barnhart, Udall.
J. M. Henderson, Burden.
Thos. Sturm, Atlanta.
G. A. Frank, Dexter.
W. H. Lightstone, Arkansas City.
M. W. Freedenburg, Winfield.

CRAWFORD COUNTY.

O. G. Keller, M. D., Englevale.
J. E. Dillard, Cherokee.
P. A. O'Reilly, Walnut.
J. S. Patton, Frontenac.
J. E. Sandridge, Mulberry.
Monter Bros., Girard.
J. E. McNaught, Girard.
Harpster Pharmacy, Hepler.
The Pittsburg Drug Company, Pittsburg.

DECATUR COUNTY.

H. O. Hardesty, Jennings.
W. T. Stevenson, Oberlin.
Norcatur Pharmacy, Norcatur.

DICKINSON COUNTY.

Dr. Ketchersid, Hope.
E. B. Malott, Abilene.
Fleming and Son, Enterprise.

DONIPHAN COUNTY.

R. R. Clutz, Bendena.
Jacob Miller, Wathena.
S. H. Blakely, Severance.
D. Sinclair, Troy.
C. W. Shreve, White Cloud.

DOUGLAS COUNTY.

J. F. Schnebly, Baldwin.
Woodward & Co., Lawrence.
Dick Bros., Lawrence.

EDWARDS COUNTY.

A. and A. Drug Company, Kinsley.
Lewis Drug Company, Lewis.

ELK COUNTY.

B. B. Marion, Grenola.
E. W. Elting, Moline.
S. R. Swan, Howard.
Jno. Kaff, Longton.

ELLSWORTH COUNTY.

W. E. Sheriff, Ellsworth.
James Latta, Wilson.
A. J. Pokoeny, Holyrood.

ELLIS COUNTY.

H. H. King, Hays.
Ford and Cave, Ellis.

FINNEY COUNTY.

A. and A. Drug Company, Garden City.

FRANKLIN COUNTY.

C. L. Becker, Ottawa.

FORD COUNTY.

(Inquire.)

GEARY COUNTY.

Volz and Birch, Junction City.

GOVE COUNTY.

(Inquire.)

GRAHAM COUNTY.

(Inquire.)

GRANT COUNTY.

R. E. Buckmaster, M. D., New Ulysses.

GRAY COUNTY.

(Inquire.)

GREELEY COUNTY.

(Inquire.)

GREENWOOD COUNTY.

J. D. Clarke, Eureka.
W. J. Bangs, Madison.
R. E. Marsh, Severy.

HAMILTON COUNTY.

W. C. Daugherty, Syracuse.

HARPER COUNTY.

Slack and Griggs, Harper.
Irwin and Potter, Anthony.

HARVEY COUNTY.

(Inquire.)

HASKELL COUNTY.

(Inquire.)

HODGEMAN COUNTY.

C. W. Patchen, Jetmore.

JACKSON COUNTY.

Scott and Taber, Holton.

JEFFERSON COUNTY

(Inquire.)

JEFFERSON COUNTY

J. O. R. Casley, Winchester.
The Webb Drug Co., Nortonville.
Fred Hess, Perry.
M. S. McCreight, Oskaloosa.
A. B. Carter, Valley Falls.
Ira Puderbaugh, Ozawie.
F. A. Snow, Meriden.

JEWELL COUNTY.

C. E. Lynn, Mankato.

JOHNSON COUNTY.

(Inquire.)

KEARNY COUNTY.

J. H. Rardon, Lakin.

KINGMAN COUNTY.

(Inquire.)

KIOWA COUNTY.

A. W. McKinley, Haviland.
D. S. Sparks, Greensburg.

LABETTE COUNTY.

H. Evans Lambe, Edna.
Kingsbury & Frick, Oswego.
G. P. Bush, Chetopa.
Feess Bros., Parsons.
Read's Drug Store, Altamont.

LANE COUNTY.

The Round Drug Co., Dighton.

LEAVENWORTH COUNTY.

C. E. Curry, Easton.
Mihl and Schott, Leavenworth.
C. H. Cain, Tonganoxie.
Adolph Lange, Leavenworth.

LINCOLN COUNTY.

J. G. Cuddy & Co., Lincoln.

LINN COUNTY.

H. H. King, Blue Mound.
E. B. Vankers, Mound City.
W. H. Broadwell, La Cygne.
E. W. Bartleson, Pleasanton.

LOGAN COUNTY.

(Inquire.)

LYON COUNTY.

W. R. Irwin, Emporia.
G. W. Britton, Hartford.
John Mignot, Allen.

M'PHERSON COUNTY.

O. S. Ellvin, Marquette.
Bert Moore, Inman.
C. W. Engborg, McPherson.
John Gustafson, Lindsborg.

MARION COUNTY.

F. A. Bichet, Burns.
R. M. Riegler, Hillsboro.
O'Brien & Tarrant, Florence.
R. W. Rowers, Durham.
D. J. Roberts, Peabody.
Red Cross Pharmacy, Marion.

MARSHALL COUNTY.

M. W. M. Reynolds, Beattie.
C. Coulter, Blue Rapids.
J. E. Henry, Summerfield.
Rummel Drug Co., Waterville.
O. N. Berry, Marysville.

MEADE COUNTY.

C. B. Leslie, Meade.

MIAMI COUNTY.

H. H. Reed, Osawatomie.
H. T. Clifton, Paola.

MITCHELL COUNTY.

W. E. Keef, Glen Elder.
D. C. Everman, Cawker City.
O'Brien Pharmacy, Beloit.

MONTGOMERY COUNTY.

A. E. Fair, Independence.
S. W. Squier, Cherryvale.
William Wright, Elk City.
J. T. Lang & Son, Coffeyville.
G. T. St. John, Caney.

MORRIS COUNTY.

F. A. Robbins, Council Grove.
A. W. Cushman, Wilsey.

NEMAH COUNTY.

J. L. Clark, Seneca.
C. L. Sherwood, Sabetha.
Searles & Purdum, Wetmore.

NEOSHO COUNTY.

B. E. Eldridge, Thayer.
J. L. Sewell, Chanute.
H. E. Stevens, Erie.

NESS COUNTY.

R. H. Hammond, Ness City.

NORTON COUNTY.

W. L. Leidig, Lenora.
W. L. Howe, Almena.
Lathrop Bros., Norton.

OSAGE COUNTY.

A. B. Bunten, Scranton.
A. C. Brown, Osage City.
H. S. Whitman, Lyndon.
L. E. Dorwin, M. D., Melvern.
Bodley & Cander, Quenemo.
J. W. Rosser & Co., Carbondale.
E. T. Price, Burlingame.

OSBORNE COUNTY.

H. B. Leach & Son, Alton.
J. B. Hatfield, Osborne.
C. L. Ebnoter, Downs.

OTTAWA COUNTY.

E. L. Chapin & Son, Minneapolis.
O. L. Kensey, Delphos.
C. D. Vermillion, Tescott.
Doctor Crosthwaite, Bennington.
Culver Drug Co., Culver.

PAWNEE COUNTY.

E. G. Wickwire, Larned.

PHILLIPS COUNTY.

McCormick & Co., Phillipsburg.

POTTAWATOMIE COUNTY.

City Drug Store, Havensville.
M. L. Stone, Wamego.
The Onaga Pharmacy, Onaga.
Star Drug Co., Westmoreland.

PRATT COUNTY.

W. D. Wiley, Pratt.

RAWLINS COUNTY.

(Inquire.)

RENO COUNTY.

A. and A. Drug Co., Hutchinson.

REPUBLIC COUNTY.

Republic Pharmacy, Belleville.

RICE COUNTY.

Lyons Drug Co., Lyons.
A. and A. Drug Co., Sterling.

RILEY COUNTY.

H. L. Willard & Co., Manhattan.

ROOKS COUNTY.

(Inquire.)

RUSH COUNTY.

Pokoung Pharmacy, La Crosse.

RUSSELL COUNTY.

G. T. Dawson, Russell.

SALINE COUNTY.

W. E. Fowler, Brookville.
Palmer Opera House Pharmacy, Salina.

SCOTT COUNTY.

F. E. Nicholson, Scott City.

SEDGWICK COUNTY.

Cookson Drug Co., Wichita.
W. S. Henrion, Wichita.
Dockum Drug Co., Wichita.
G. T. Riley, Wichita, Station A.

SEWARD COUNTY.

Geo. Smith & Bros., Liberal.

SHAWNEE COUNTY.

Matt Weightman, Topeka.
Fred Snow, Topeka.
G. H. Ensign, Oakland.
Geo. W. Stansfield, Topeka.
Campbell Drug Co., 821 N. Kan. ave., Topeka.

SHERIDAN COUNTY.

D. L. Wiggins, Hoxie.

SHERMAN COUNTY.

Arensburg & Cullen, Goodland.

SMITH COUNTY.

L. A. Golden, Kensington.
Rinehart & Slagle, Smith Center.
W. S. Arbuthnot, Lebanon.
A. M. Lewelling, Gaylord.

STAFFORD COUNTY.
Tamer & Uhl Drug Co., St. John.
J. F. Demam, Macksville.
A. and A. Drug Co., Stafford.

STANTON COUNTY.
(Inquire.)

SUMNER COUNTY.
C. E. Palmer, Mulvane.
John J. Sippy, Belle Plaine.
H. A. Kenneke, Wellington.
Dr. Ira T. Gabbert, Caldwell.

STEVENS COUNTY.
J. B. Porter Drug Co., Hugoton.

THOMAS COUNTY.
J. B. Hampton, Colby.

TREGO COUNTY.
(Inquire.)

WABAUNSEE COUNTY.
E. R. Brown, Eskridge.

WALLACE COUNTY.
J. P. Warmeringer, Sharon Springs.

WASHINGTON COUNTY.
J. W. Montgomery, Greenleaf.
Dingman Bros., Hanover.
Waterman Bros., Washington.

WICHITA COUNTY.
A. M. Doyle, Leoti.
O. E. Smith, Leoti.

WILSON COUNTY.
Pierce Bros., Fredonia.
W. H. H. Smith, Buffalo.
Pierce Bros. and Eason, Neodesha.

WOODSON COUNTY.
(Inquire.)

WYANDOTTE COUNTY.
H. E. Dengel, Kansas City.
G. W. Scott, Kansas City.
Hassig Bros., Kansas City.
Geo. Forschler, Kansas City.
Harry Lieby, Kansas City.
Red Cross Pharmacy, Kansas City.
O. W. Klee, Kansas City.
Osage Pharmacy, Kansas City.

STATE WATER SURVEY No. VI.

By E. H. S. BAILEY, Ph. D., Director, and C. C. YOUNG, Analyst.

LAWRENCE, KAN., March 15, 1910.

We have to report the following analyses made in our laboratory since date of last report. These analyses are mostly of city and proposed city supplies.

SANITARY ANALYSES OF WATERS. Parts Per Million.

No.—CITY.	Date, 1910.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₃	N. in NO ₂	Cl.	Solids.	Loss on ignition.	Oxygen consumed.
111 Arkansas City.									
(a) City.....	2-21	.016	.020	.0	.0	333	1295	114	.74
(b) River.....	2-24	.204	.346	.5	.024	314	1546	213	2.87
(c) Goff W.....	2-24	.092	.440	.3	.001	472	1577	424	3.51
(d) Mains.....	2-24	.140	.222	10.0	.100	157	830	229	3.18
(e) Spring.....	2-24	.108	.168	1.0	Tr.	11	377	173	.86
(f) Walnut.....	2-24	.088	.160	1.5	.001	16	440	134	2.53
112 Ashland*	1-17	.060	.188	.8	.0	21	953	214	2.51
113 Baldwin.									
(a) Mains.....	3- 8	.140	.104	.7	.001	10	108	31	1.72
(b) Reservoir.....	3- 8	.160	.152	.5	.001	7	100	36	2.59
(c) Well.....	3- 8	.054	.066	5.0	.005	327	1232	367	.68
114 Coffeyville.....	2-10	.076	.144	2.5	.005	5	493	109	.54
115 Hays.....	1-19	.036	.050	.0	.0	14	445	166	1.43
116 Lincoln*	3-10	.....	.....	1.5	.....	31	632	143	.....
117 Leavenworth.....	1-13	.152	.328	4.0	.010	32	299	119	4.30
118 Parsons "tap".....	2-14	.048	.098	1.0	.002	8	176	44	1.5
119 Pleasanton.									
(a) Filtered.....	1- 8	.104	.146	.7	.001	4.6	200	62	2.30
(b) Lake.....	1- 8	.124	.186	.7	.003	4.4	230	69	11.55
120 St. Marys.....	1-17	.....	.....	5.0	.0008	51	586	270	.66
121 Sabetha.....	2-17	.012	.042	3.0	.0	9	399	119	.27
122 Wichita.									
(a) Mains.....	2-16	.032	.080	.5	.0008	277	1154	141	.94
(b) Well.....	2-28	.078	.074	1.5	.0	34	462	124	.71
(c) Little river.....	2-28	.188	.178	.3	.001	74	506	123	1.23
123 Wilson.									
(a) Spring.....	2-14	.016	.032	3.5	Tr.	21	295	117	.40
(b) Well.....	2-14	.036	.050	1.5	.0	25	358	124	.308
(c) Well.....	2-14	.020	.044	.5	.0	14	293	73	.37
(d) Well.....	2-14	.022	.064	16.0	.001	45	575	236	.308
124 Wa Keeney.....	1-22	.052	.094	.5	.003	7	355	183	.601

* Mineral analysis.

DETAILS.

111. **Arkansas City.**—This series of analyses was submitted by W. S. Scruton, superintendent of waterworks, at the suggestion of State Sanitary Engineer W. C. Hoad, in hopes that a new and better supply might be obtained.
- (a) This water contains a large amount of sulphates and 5.72 parts per million of iron oxide, which might make the water inconvenient on account of staining. It is proposed to use this water as an addition to the present city supply.
 - (b) From Arkansas river. Sulphates, 379.47 parts per million. Iron oxide, 7.15 parts per million.
 - (c) From Goff well. Sulphates, 116.84 parts per million. Iron oxide, 2.15 parts per million.
 - (d) City mains. Sulphates, 131.9 parts per million. Iron oxide, 0.429 parts per million.
 - (e) Spring. This water contains 38.84 parts per million of sulphates and 0.143 parts per million iron oxide.
 - (f) Walnut river. Sulphates, 87.05 parts per million. Iron oxide, 0.715 parts per million. Comparing these waters, it is evident that there is a large amount of organic matter, as shown by free and albuminoid ammonia and the high nitrites in *b*, *c* and *d*. This renders these waters suspicious. It is just possible that the containers for these waters were not entirely clean, which might explain the extraordinary amount of nitrites in *b* and *d*.
112. **Ashland.**—This water was submitted by Mr. E. B. Black as a proposed city supply. For mineral analysis, see page —. The main constituent of this water is calcium sulphate, and, although the water is not very hard, it will probably be improved greatly by continued pumping, as the turbidity was higher than usual.
113. **Baldwin.**—These waters were submitted by Chas. W. Holliday under the direction of Prof. W. C. Hoad.
- (a) From reservoir.
 - (b) Effluent from Pittsburg type filter after coagulation with alum.
 - (c) From a semipublic well in the city. This supply is obtained by impounding the water from springs and from a small catchment area owned by the city. As will be seen, the reservoir and the filter water are very soft compared with the well water. The filtration of the reservoir water has clarified the water and reduced the amount of organic matter. With proper care in filtration this should be a very good water.
114. **Coffeyville.**—This is a new well in the Neosho bottoms, and a proposed addition to the city supply. It is from the water-bearing gravel of the Neosho bottoms. The cause for the high nitrites should be looked into. Otherwise the water seems very satisfactory. Sulphates, 29.62 parts per million. Iron oxide, 4.97 parts per million.
115. **Hays.**—This water was submitted by J. B. Gross. It is from a private well that was considered suspicious from its location; however, as far as the chemical analysis can show, it is a better water than previous ones sent from Hays.
116. **Lincoln.**—This water was submitted by Prof. Geo. C. Schaad, of the University of Kansas, for J. W. Grub, of Lincoln. This analysis was made with special reference to boiler scaling properties. For mineral analysis see page —.
117. **Leavenworth.**—This water was submitted by Dr. C. R. Carpenter, health officer of Leavenworth. It was taken from the well of E. Theel, 112 Kickapoo street, Leavenworth. The high nitrites and ammonias, together with the residue charring on ignition, render this water suspicious, so much so in fact as to be unfit for domestic consumption.

118. **Parsons.**—This water was submitted by H. C. Markham, president of the board of health, and was taken from one of the city taps by him. This is a remarkably soft water. The high nitrites render the water suspicious. A further investigation would undoubtedly result in a satisfactory explanation of the cause of this organic matter.
119. **Pleasanton.**—From J. A. Gentle, superintendent of waterworks.
 (a) Filtered water, 5.6 parts per million of iron and aluminum oxides.
 (b) Lake water. 43.2 parts per million of iron and aluminum oxides.
 The filtered water shows a slight reduction in the amount of mineral matter present and also in the amount of suspended matter. The iron has been reduced somewhat by filtration. The large amount of organic matter present in these waters, as indicated by the nitrites and ammonias and oxygen consumption value, is undoubtedly due in a measure to the very large number of carp that are in the lake. It is suggested that some method be devised for removing the carp from the lake and in that way giving opportunity for the water to settle.
120. **St. Marys.**—This water was taken from the city supply. The partial analysis made does not show that the water is at all unsatisfactory.
121. **Sabetha.**—Proposed city supply. This water was submitted by Prof. W. C. Hoad, state sanitary engineer. Sulphates, 29.62 parts per million. Iron oxide, 0.715 parts per million.
122. **Wichita.**—These waters were submitted by J. S. Worley, sanitary engineer, who is appraising the plant for the city.
 (a) City mains. Sulphates, 369.8 parts per million. Iron oxide, 0.572 parts per million.
 (b) McLean well. Sulphates, 53.64 parts per million. Iron oxide, 0.429 parts per million.
 (c) Little river. Sulphates, 78.49 parts per million. Iron oxide, 0.715 parts per million.
123. **Wilson.**—This series of waters was submitted by Prof. W. C. Hoad, with the hope that the analyses would decide which was the best for a city supply.
 (a) Spring one and one-half miles south of town.
 (b) Well, 186 feet deep, in the north part of town.
 (c) Well, 70 feet deep, in sand rock, one-half mile north of town.
 (d) Baum well, one-half block west of post office. Sheet water flow, 7½ feet thick.
 a, b and c are very nearly equally good waters, while d is rendered suspicious by the high nitrites and nitrates.
124. **Wa Keeney.**—Proposed city supply. Sulphates, 2.8 parts per million. Iron and aluminum oxides, 4.8 parts per million.

MINERAL ANALYSES OF WATERS. (Hypothetical Combination.) Parts per Million.

No. 112.		No. 116.	
Sodium Chloride.....	34.65	Sodium Chloride.....	51.15
Magnesium Sulfate.....	60.90	Sodium Sulfate.....	225.77
Calcium Sulfate.....	402.41	Sodium Nitrate.....	9.10
Magnesium Carbonate.....	136.45	Calcium Carbonate.....	362.15
Oxides of Iron and Aluminum.....	20.00	Magnesium Carbonate.....	14.38
Insoluble Residue.....	120.00	Insoluble residue.....	24.20
Sodium Sulfate.....	Some.	Oxides of Iron and Aluminum.....	1.40

Gas heating stoves that are not properly vented into a flue, and the draft kept open, are a source of danger to the household from the carbon dioxide and carbon monoxide given off in combustion. Headache, burning eyes and a general lowered bodily vitality is certain to follow.

A Polluted Spring.

By C. C. YOUNG, Chemist State Water Survey, under State Board of Health.

During the last week in November, 1909, the attention of the State Board of Health was called to a spring in the heart of the residence district of a certain town in eastern Kansas. Of the eight cases of typhoid fever in the town six were known to be users of the spring water. This spring is known as the "—— spring," and obtained its reputation for great purity of water long before there were any houses on the hill above, which is now built up very closely.

Owing to the neglect of the attending physician to make reports to the county health officer the history of these cases was taken down from the personal knowledge of the local health officer. The present owner of the spring was forced to leave his business on account of high fever the last day in October. During September and October he was debilitated and almost incapacitated at times. He was a constant user of the spring water, and usually drank from a cup that hung in the spring house.

Miss —— was taken sick with typhoid fever the last of September. Death resulted. A brother contracted fever and the diagnosis of typhoid was announced the first week in October. He recovered. The family carried the water used for drinking purposes from the spring, dipping from the little reservoir.

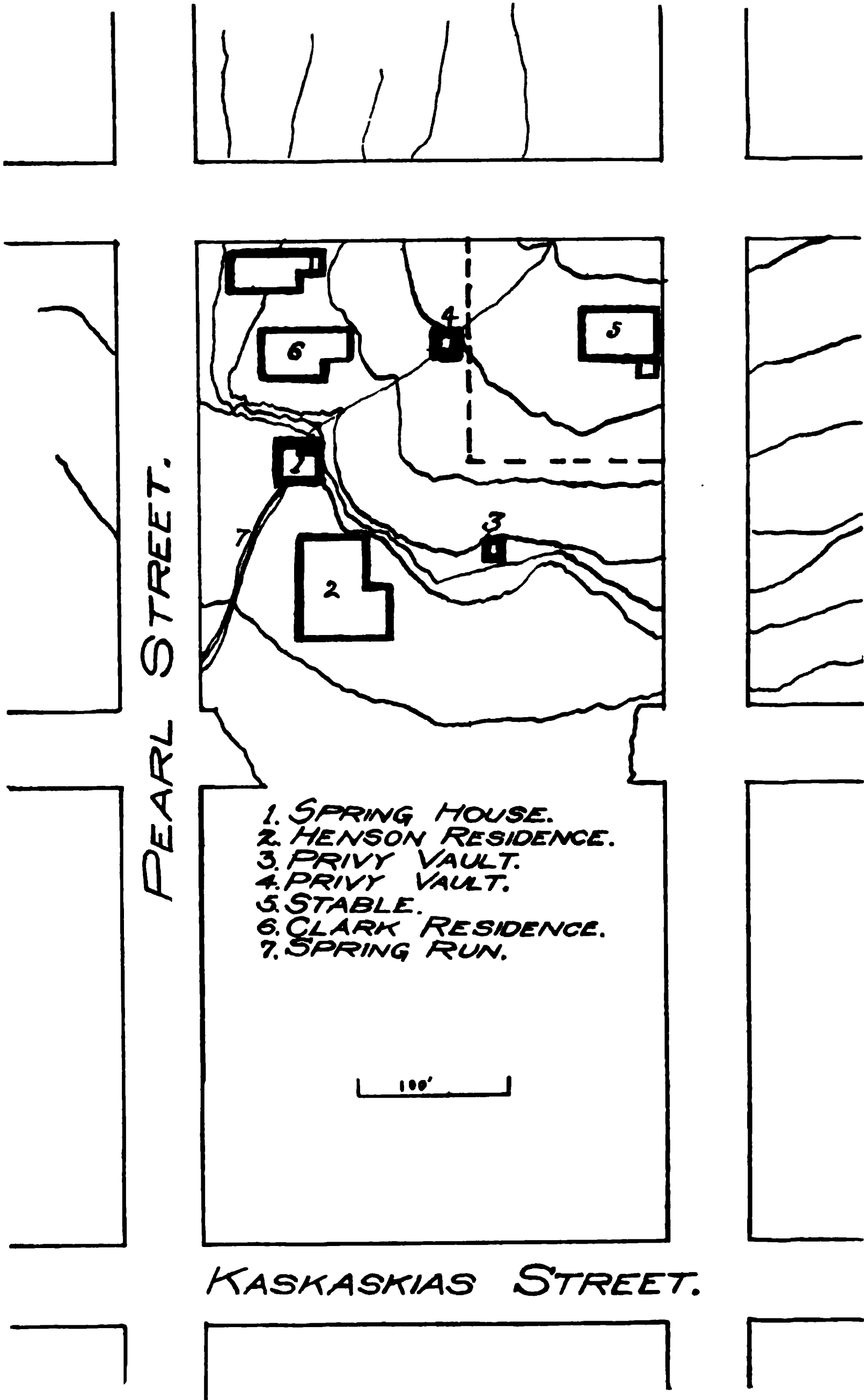
November 4 a servant in the home of the owner of the spring was taken sick and the case was diagnosed as typhoid fever. Recovered.

During the second week in November Miss —— came down with typhoid. She had played about the spring with the children, drinking the spring water.

Mr. ——, an employee of the bank, contracted typhoid fever the second week in November, which resulted in death. All the water used at the bank was carried from the spring.

This spring is located three blocks north of the business part of town. It outcrops from the shale under a limestone ledge at the foot of a hill, as is shown in the sketch. The contour lines represent approximately five feet rise in elevation. Just about 100 feet above the spring is a privy vault. This vault is in a small ravine which culminates very close to the spring. Also, the drainage from the barnyard above comes down this same ravine.

As was stated at the beginning of this report, before any population accumulated on the hill above the spring, the water was of



undoubted purity; but at the present time the hill is dotted with barnyards, privy vaults, and a sewer line runs along the top of the hill about 100 yards from the spring, so, to begin with, the location is suspicious. On January 1, 1910, samples of the water were taken for analysis by the author, a chemist of the State Water Survey. The results of the analysis are as follows:

Sanitary analysis.	Parts per million.
Turbidity.....	Clear.
Oxygen consumed.....	3.25
Nitrogen as free ammonia.....	0.098
Nitrogen as ammonia.....	0.102
Nitrogen as nitrites.....	0.002
Nitrogen as nitrates.....	40.
Total solids.....	840.
Loss on ignition.....	828.
Fixed residue.....	512.
Chlorine.....	69.
Bicarbonates.....	384.8

The residue charred on ignition and deflagrated, due to nitrates present.

The high nitrates, nitrites and ammonia, taken with the large amount of organic matter indicated by the oxygen consumption value and the residue charring on ignition, show that the water has a long history of pollution. Even though at the time this analysis was made no gas-forming organisms were found, nitrifying bacteria have undoubtedly been present.

In taking the sample it was noticed that the catch basin for collecting the water from the spring was not in direct line of flow, and the water remained dead until stirred up by some one drawing water.

The conclusion is, that the spring is in a location where it is liable to pollution at any time, that the chemical analysis shows a history of pollution, that the negative results from coli tests might well be explained by the fact that the ground had been frozen for several weeks previous to the time of sampling. The numerous similar cases on record should be an incentive towards perfecting and maintaining an efficient and sanitary city supply in all cities and towns in the state.

Enlarged cervical lymphatic glands, which formerly were believed to indicate a syphilitic lesion, acquired or inherited, is now known to be in a large majority of cases due to septic infection through the gateway of the tonsillar crypts.

The Pollution of Underground Waters.

By S. J. CRUMBINE, M. D. Read before the Kansas Academy of Science, at their annual session in Ottawa, December 29, 1909, and published in the BULLETIN by a resolution of request of the Academy.

The source of water for domestic purposes might be divided into three classes: First, waters secured from streams or lakes; second, impounded surface waters, as ponds, cisterns, etc.; third, the ground waters, such as wells and springs. The latter source of supply is by far the greatest source of supply to the people of this country, and it is to the discussion of the pollution of this class of waters that I desire to direct your attention.

The amount of ground water in the earth's crust is enormous. An estimate made by DeLesse, based on the assumption that the water in rocks diminished from 5 per cent of their weight, or $12\frac{1}{2}$ per cent of their volume, at the surface, to nothing at a depth of six miles, and that water may exist in liquid form at a temperature of 600 degrees C., gave a sheet of water over 7500 feet thick surrounding the earth.

Slichter made an estimate of less than half that of DeLesse, which estimate was equivalent to a uniform sheet of water 3000 feet in thickness.

Chamberlain and Salisbury, assuming a porosity of 5 per cent for the soil, estimated a layer of water 1600 feet in depth covering the entire surface.

Myron L. Fuller, of the United States Geological Survey, after making an extensive investigation and experiments as to the porosity of soil and rock in this country, together with the thickness of sediments, and the evidence of the circulation of free water in the earth's crust, came to the conclusion that the total free water held in the earth's crust would be equivalent to a uniform sheet over the entire surface of a depth of 96 feet. The underground water would therefore be estimated to be only one one-hundredth of the volume of the ocean, instead of nearly one-half as figured by DeLesse. And Fuller finally concludes that the average amount of water in the earth is probably under, rather than over, the amount estimated.

Comparatively little of this ground water is available for the purpose of a domestic water supply, for reasons which are self-evident. First, probably a larger share of it carries such quantities of chlorine or minerals as to make it unsuitable; and second, the greater portion of it is at such depths as to be beyond the reach of economic production. It is only such portion of the

ground water coming from springs or that is available by comparatively shallow wells which have any sanitary significance, and to which we will confine our discussion.

Ordinarily the amount of ground water available in a community depends upon the annual precipitation. The mean annual average rainfall for the different portions of the United States, as tabulated by the weather bureau, is 30 inches.

Church estimates that one inch of rain would amount to nearly 101 gross tons per acre, or on a house roof, say 20 x 30, one inch of rain would amount to about 250 gallons.

Some one has estimated that one-half of the precipitation finds its way into the streams, finally joining the great ocean. This would give the remaining half of this tremendous annual precipitation to be absorbed by the soil, or given off by evaporation.

It is commonly believed by the majority of laymen that rain water is an absolutely pure water, but this belief is erroneous; for the raindrops in passing through the atmosphere wash out and collect enormous quantities of dust, smoke and gases, so that, bacteriologically speaking, it is exceedingly doubtful whether any rain water is absolutely pure. It is probably true that there would be very little if any pollution of rain water to the extent of making it a dangerous pollution.

. As soon as the rain falls upon the earth it of necessity comes in contact with the gross pollution of the top layers of the soil, which some one has denominated the "living earth," and which, as every one knows, is teeming with myriads of all kinds of germ life. In the inhabited areas this pollution is of a dangerous sort, as would naturally be expected.

With the descent of the raindrops into the soil there is carried with it more or less organic and inorganic matter, soluble and insoluble, and myriads of living and lifeless organisms. As the water sinks deeper and deeper into the porous soil the insoluble matters, as well as the bacterial contents, are gradually filtered out, the rapidity and degree of filtration depending, of course, on the nature and porosity of the soil. As the filtration process goes on the water, being robbed of its organic matter, becomes less able to support abundant bacterial life.

The average soil under ordinary and uncontaminated conditions is supposed to be practically sterile at a depth of twelve feet; at least sufficiently so for all sanitary purposes. Thus the great mass of rainfall, although grossly polluted when first finding its way through the top layer of soil, under ordinary conditions is of a high

sanitary quality after having passed through ten or twelve feet of soil. These waters, while of a high organic purity, become in many places rich in inorganic matters, and belong to the class known as hard or mineral waters; in many cases being so highly loaded with sulphates, chlorides or carbonates as to be unfitted for domestic use.

On the other hand, ground waters may be basely polluted, instead of purified, when they are on their passage through the earth. If the earth is saturated with impurities, as may occur from leaching cesspools, privy vaults, sink drains, barnyards, burying grounds or other sources of pollution, nature's purifying operations may give way to one of intense pollution.

Wells whose source of supply is from the so-called first stratum of water, in the densely populated communities along the Arkansas river and the Kaw river and its tributaries, are peculiarly susceptible to this form of ground-water pollution. The first stratum of water is usually from eight to fifteen feet from the surface, with an exceedingly porous and sandy soil intervening, and thus any unusual or great amount of pollution overtakes the purifying and filtration properties of this soil, and there is a resulting contamination of the underground water.

The prosperity of the people, in the smaller communities and towns of the state, is perhaps no better reflected than in the movement to improve and modernize their homes. This calls for some method of sewage disposal, and in the absence of a sewerage system the disposal usually resorted to is the construction of a cesspool, and in some instances the use of an abandoned well. Thus in the river valleys above referred to the ground water may be and often is very badly polluted.

Recently it was suspected that a cesspool situated about 150 feet to the west of a well, in a certain city on the Smoky Hill river, was polluting the underground water. In order to determine whether or not the liquid contents of the cesspool was finding its way into the well a solution of iron sulphate was put into the cesspool, and in about 48 hours the people who were using the waters of the well were able to identify the astringent and bitter taste of the iron. A chemical and sanitary analysis of the waters of this well proved, what the solution of iron sulphate had already proven, that the users of the water from the well were drinking the diluted sewage of their neighbors.

It is true that this sewage would for a considerable period of time be to a greater or less extent purified, that is to say, would

not contain any pathogenic organisms; yet, as time goes on the degree of pollution, as well as the areas of pollution, gradually increases, until it would seem to be entirely possible for disease to be transmitted in this manner. At all events, there are few of us who have the desire to drink the sewage of our neighbors, notwithstanding we may have the scientific assurance that it is perfectly harmless.

Another illustration of this sort of pollution occurred at the sugar refinery at Garden City. Tons and tons of beet pulp were heaped upon the ground, for the want of a better place of storage, which was allowed to remain for a number of months, much of it undergoing fermentation and decomposition. In the spring this beet pulp was disposed of and the ground thoroughly cleansed of all of the pulp. Yet, for a number of months afterwards a series of wells, which had been constructed by the sugar company at a point several hundred feet east of the place used as a storage for the beet pulp, and which were being pumped at the rate of several million gallons of water per day, continued to throw off the vilest odors of sulphureted hydrogen gas, and deposited in the troughs which conveyed the water to the factory a thick, heavy layer of organic matter.

Another method of pollution of wells and springs is through faults or fissures of an impervious strata carrying the groundwater supply, or through which a head of water draining a polluted basin or area finds its way to the surface in the form of a spring through a fissure.

There is at least one example of this kind in Kansas. A certain city has for a number of years boasted upon the purity of its public supply, because, forsooth, it was spring water. Bacteriological test of this water, on a number of occasions, showed it contaminated with colon bacillus. Careful investigation by the engineer and secretary of the State Board of Health, revealed the fact that this spring was, in the main, the outlet from extensive basins and swamps located near by, and which came to the surface through a large fissure of the overlying rock.

Literature records a number of extensive epidemics of typhoid fever, due to these underground breaks or fissures. In one instance in Switzerland an epidemic of typhoid fever broke out in a certain village and over 17 per cent of the inhabitants were stricken. The entire village was supplied from waters of a spring. A painstaking investigation revealed the following facts: On the other side of the ridge was a little valley which when irrigated, always increased

the flow of the spring on the other side of the mountain. It was found that a peasant living in the valley had returned from a distant city sick with the fever, and that the water in a brook in which his clothes had been washed, and into which the slops from the house had been cast, had been used to irrigate the meadow. Of course the polluted water filtered through the surface of the soil and joined the underground water to go no one knew where. In order to determine if it could be possible that this spring was fed by the underground waters of a valley a mile away, a large quantity of salt was thrown into a hole dug into the valley to a water-bearing vein of sand and in a few hours the waters of the spring became very salty, and thus was established the connection between the irrigated valley and the spring.

To conclude that because water is bright, clear and sparkling that therefore it is wholesome is highly erroneous. The very gases of decomposition may make a sparkling water, and but little filtration is necessary under ordinary conditions to remove turbidity. Therefore shallow wells or springs located in densely populated areas, or in loose, porous soil, or near to known and evident sources of pollution must be always under suspicion as to their purity and wholesomeness, regardless of physical appearance.

Another source of pollution of wells and springs, and which after all is probably the most common, and certainly the most dangerous, is that of direct surface contamination, in which the polluted surface water finds its way into the well or spring without the purifying filtration of intervening layers of soil.

In this connection, I desire to quote a paragraph which recently appeared in the pamphlet issued by the Merchants Association Committee of New York, which had undertaken the investigation of the cause of typhoid fever in that state:

"Great cities are developing some sort of a sanitary conscience. Farmers and country districts have as yet little or none. Bad as our city water often is, and defective as our system of sewerage, they cannot for a moment compare in deadliness with the most unheavenly pair of twins, the shallow well and the vault privy. A more ingenious combination for the dissemination of typhoid than this precious couple could hardly have been devised. The innocent householder sallies forth and at an appropriate distance from his cot he digs two holes, one about thirty feet deep, the other about four. Into the shallower he throws his excreta, while upon the surface of the ground he flings abroad his household waste from the back stoop. The gentle rain from heaven washes these

various products down into the soil and percolates gradually into the deeper hole. When the interesting solution has accumulated to a sufficient depth, it is drawn up by the old oaken bucket or modern pump, and drunk. Is it any wonder that in this progressive and highly civilized country 350,000 cases of typhoid occur every year, with a death penalty of ten per cent?"

It must be admitted that in locating the outbuildings and the well on the average farm or in the average small town the bearing of such location on sanitation and hygiene is entirely disregarded, the convenience of the family only being taken into consideration; and thus the well is as often located below as above the surrounding sources of pollution, the surface water from rains carrying house slops, barnyard drainage and filth from the near-by privy near to, or often actually into, the well, unless it has been constructed in such a way as to exclude surface contamination.

Not only may typhoid-fever bacteria be carried into wells and springs in this manner, but those organisms which cause digestive disturbances and serious troubles, such as diarrhea, dysentery, cholera and tuberculosis, may be carried into the water used for domestic purposes. Then, again, eggs of animal parasites may be washed in from the surface, and it seems to be quite certain that many of our intestinal parasites are thus disseminated.

At the recent International Congress on Tuberculosis, Dr. Samuel Dixon, health officer of Pennsylvania, called attention to the possibility of the dissemination of tuberculosis through drinking tubercular-infected water.

Rosenau has recently compiled the observations made by other investigators, and concludes that the tubercular bacillus may live and remain virulent in water for several months.

Since the danger of ingesting the *tubercle bacillus* is now so well established, its presence in drinking water assumes a special significance. Drinking water may, therefore, harbor a disease equally dangerous to that of typhoid fever and cholera.

Hazen sometime ago formulated and enunciated the following theorem: "For every death from typhoid fever avoided by the purification of public water supplies, two or three deaths are avoided from other causes."

The habit of promiscuous spitting of a consumptive upon the ground surrounding his dwelling, on the theory that the air and sun will soon make proper disposition of such sputum, is fraught with quite as much danger to the users of an unprotected ground-water supply as would be the habit of throwing the unsterilized

discharges of a typhoid fever patient upon the ground surface about the house.

We are beginning to appreciate more and more the absolute necessity of safeguarding our water and food supply from the contamination of the *tubercle bacillus*, if we may hope for a control of this widespread disease. We have found out that the second and third cases of tuberculosis occurring in the same family is a case of the inoculation of the well from the sick, and not that of hereditary transmission; and it is not improbable that this inoculation is very often conveyed through the medium of the domestic water supply.

In the report of President Roosevelt's Country Life Commission I find the suggestive comment: "Theoretically the farm should be the most healthful place in which to live, but it is a fact that there are numberless farm houses and rural schoolhouses that do not have the rudiments of sanitary arrangement.

"The extensive spread of hookworm disease in the Gulf Atlantic states, and presence of typhoid fever and malaria in many localities, is more than a regional question; it is nation-wide in importance."

Dr. Worden Stiles, in a recent pamphlet issued by the Public Health and Marine Hospital Service, made a tabulation of 366 farmhouses scattered over four Southern states, and which was presumed to be representative of the conditions in those states. He found that only 115, or 31.4 per cent, were provided with privies, while 251 houses, or 68.5 per cent, had no privy. Thus a condition of theoretical maximum soil pollution was occurring in 68.5 per cent of the houses in question.

When it is considered that not only hookworm disease, but typhoid fever, are spread through night soil, the importance of this soil pollution becomes evident. Of course, it is understood that even when a privy is present soil pollution may occur, in case the outhouse is not properly built or not properly cleaned.

Stiles goes on to say that among several thousand privies examined on farms, and in various villages, the prevailing style was found to be the surface privy open in the back. This is the poorest compromise that can be made, for not only is the danger present of contaminating the water supply in near-by wells, but soil pollution naturally occurs around the outhouse, and this is increased by the fact that chickens, dogs and hogs have access to the night soil and scatter the infectious material around.

Of the 121 public water supplies of Kansas, 89 are ground-water supplies, four of which are from springs and 85 from wells. This

large per cent of the city population, together with the greater number of our entire rural population, are dependent for their domestic water supply upon the underground waters. It is at once apparent that the conservation of the ground waters of the state from dangerous pollution is of state-wide importance.

Water pollution involves economic as well as public health problems. According to the census of 1900 there were 35,379 deaths from typhoid fever throughout the United States. On an estimated mortality of 10 per cent it is within reason to assume a yearly prevalence of 353,790 cases of this disease. If we calculate the average cost for care, treatment and loss of work to be \$300, and the average value of a human life at \$5000, we have a total loss in the United States of \$283,320,000 from one of the so-called preventable diseases. Applying these figures to Kansas, we find that there were reported in 1909 355 deaths from typhoid fever, which, with a mortality rate of 10 per cent, would mean 3550 cases of typhoid fever, making a total economic loss to Kansas from typhoid fever of \$2,840,000, and this from a preventable disease.

Add to this enormous sum the economic loss through the dissemination of other diseases, which might properly be charged to the pollution of water supply, it swells the total to amounts which are almost beyond credulity.

Surely the time has come, now that science has demonstrated these facts beyond successful contradiction, that our government, both state and national, assume such control over the natural waters of this country, both surface and underground, as will preserve the lives and health of its citizens and stay this enormous economic waste.

The Location of a State Sanatorium for Tuberculosis.

By M. A. BARBER, Department of Clinical Medicine, University of Kansas, Rosedale.

It is proposed in this paper to treat the question of sanatorium location with especial reference to the conditions now existing in Kansas.

During the past two legislatures Doctor Crumbine, secretary of the State Board of Health, has prepared a bill for the establishment of a state sanatorium, and both times the bill has been defeated. So nothing has been done by legislative enactment leading either to the establishment or the location of such an institution. It may be thought, then, that a paper on the question of location is premature; that it is well first to get your sanatorium, then to locate it.

But the continued efforts of the Board of Health, the increased popular interest in the matter, both in the state and in the nation, and the potent example set by other states must sooner or later lead to success in Kansas. A plan well matured has a better chance of success before a legislature than a less definite proposition, so it may not be too soon to consider the all-important matter of the location of an institution of this kind.

It may assist us in getting at the matter to consider it from two points of view, the one climatic, the other economic and sociological.

The climatic conditions existing in Kansas may be conveniently presented to us by the following chart. On a hydrographical map prepared by the Department of Geology of the University I have traced solid lines representing the rainfall in different parts of the state. These lines, giving the precipitation in inches, were taken from data collected by Prof. E. C. Murphy, formerly of the University. They were located some years ago, but they fairly represent conditions existing to-day. It is readily seen that the rainfall, forty inches or more in the southeastern corner of the state, gradually decreases to fifteen inches or less in the southwestern corner. I have further traced on the map dotted lines giving in a general way the differences in elevation. These lines were taken from a recent map prepared by the weather bureau of the United States Department of Agriculture. If we take the elevations of the extreme eastern and the extreme western borders, not given on this map, we find in the state a moderately gradual rise from 720 feet at the Missouri river to about 3400 feet at the Colorado line, a difference of about 2700 feet.

From the United States weather bureau report we obtain further data. Following the method of the weather bureau we will divide the state into an eastern, a middle and a western division. In the eastern division there is an average of seventy to one hundred days in the year for which a rainfall of 0.01 inch or more is recorded; in the middle division the averages vary from forty-nine to eighty-seven days, and in the western from thirty-eight to sixty. Taking the extremes there is a variation from about fifty rainy days in the extreme western to about one hundred in the eastern. Accepting these data as a rough indication of the amount of cloudiness, the western division shows a markedly greater amount of sunshine than the eastern.

As regards mean annual temperature the difference is little, ranging in all three divisions from 51° to 53° Fah. The mean monthly temperatures are also very similar in the three divisions.

Elevation.....3000 ft

2000 ft

1500 ft

1000 ft

Comparing the highest with the lowest temperatures we find about the same range in all divisions, ranging from 30° or more below zero to 112° above. Data regarding the amount of wind are inadequate for comparison, but we can safely state that the annual number of miles of wind is greater in the western portion.

As regards the climatic conditions commonly supposed to affect tuberculosis, we have then as chief differences between the eastern and western portions of the state elevation, precipitation and humidity, days of sunshine, and probably also amount of wind.

On the economic side of our problem we have the cost of establishment and of maintenance. The first cost of the land would probably be greater in the eastern, the cost of building and of subsequent maintenance greater in the western part of the state. A sanatorium in the extreme western portion should be in an irrigated district, both on account of the protection afforded by more abundant vegetation against wind and dust, and on account of the advantages of agriculture as employment for incipient or arrested cases. In the matter of employment there are economic as well as therapeutic considerations. While a successful farm may not bring in a great income in money, it is of much advantage in furnishing to the sanatorium fresh vegetable and dairy products. I had the opportunity last summer of spending a week on a farm sanatorium in Maryland, and I can testify to the material advantages of such an institution, as well as to the therapeutic advantages for patients able to do out-of-door work. A well irrigated farm in the western counties would afford these advantages, but in considering cost of maintenance one would have to add the expense of such irrigation.

On the sociological aspect of the matter the farm employment has a distinct bearing. A large proportion of the inhabitants of this state are either farmers or are but one generation removed from an agricultural life. A farm sanatorium would then receive a class of patients possessing some knowledge of agriculture. This knowledge would not only be an advantage during residence in the sanatorium, but it, together with the experience gained in the institution, would aid in the scarcely less important problem of employment after discharge. With our Agricultural College to aid it would not be impossible to impart to certain classes of patients some knowledge of the newer and more scientific farming, knowledge which might be a useful adjunct to the hygienic training they receive. Assistance in the direction of obtaining permanent agri-

cultural employment might be arranged for those persons who have qualifications and tastes for such work.

These advantages could be obtained in the western as well as in the eastern part of the state. But nearness to the Agricultural College and the other institutions of the state and the neighborhood of a more intensively tilled section of country would favor agricultural activity in the sanatorium.

The center of population in this state is probably about a hundred miles from the eastern line and not far above or below the middle line. In other words, half the population is in the eastern quarter, or at most the eastern third, of the state; and the general distribution of population is not likely to change for many years. The advantages of locating a sanatorium near the more thickly populated portion of the state are obvious. The shortness of the distance and the nearness of friends and home would encourage a far larger number to take advantage of sanatorium treatment than could be attracted to a more distant location. Dr. Lawrason Brown estimates that under our present conditions 98 per cent of tuberculous persons have to be treated at home, and that 75 per cent of those who seek sanatorium or climatic treatment leave before cure is accomplished. An important part of the work of the sanatorium must then be educational, and such work must be available for those who are outside of the institution as well as for residents. It is evident then that the institution most useful in this respect is the one in closest touch with the mass of people. The educational influence of patients returned to their homes would be the greater the larger the number of persons treated; and the other agencies which bring the sanatorium into connection with the people, the dispensary and the system of visiting nurses, are most effective when the sanatorium is convenient to the larger towns.

Finally, either two sorts of sanatorium must be established or the one must be adapted to two classes of patients: First, to those who are presumably curable; second, to those advanced cases whose stay in the sanatorium is in part in order to promote their greater comfort, but in larger degree in order to remove them from surroundings where they may be a source of danger to others. For advanced cases a location near the centers of population would be of distinct advantage if not absolutely necessary. A hospital must be built for this class of patients, and, since hospital facilities must be provided for the curable cases as well, it would be economy to arrange both classes under the same management; especially

since cases occur in which it is necessary to transfer persons from one group to another.

A further advantage of treatment in the patient's own neighborhood is that on returning to his home his subsequent life will be passed in the environment in which the cure was effected.

The arguments sometimes made against treatment in one's own environment—the advantage of a change, even though to an environment in no way superior and the possibility that a patient once a long way from home is more likely to remain until benefited—can hardly be compared with those in favor of treatment near home, and it will be conceded that without climatic advantages the western counties can hardly establish their claim. The problem then hinges largely on the question of climate.

If we turn to the opinions of experts in this matter, sanatorium authorities and others, we are impressed with the lack of unanimity of opinion. One authority may hold to the advantages possessed by a given climate, while another may hold to the efficacy of a climate having very different characteristics. Nearly all admit the possibility of successful treatment in any climate of average quality. We are left with the final impression that the case for any climatic characteristic commonly recommended is neither fully established nor disproved. If we discuss the matter with physicians who have had local experience we are brought little nearer to a decision. One will speak of the success he has had with patients sent to Garden City, another of the peculiar advantages of Kansas City. We are brought to realize that however helpful the opinion of others we must finally decide the matter ourselves.

Admitting that elevation is an advantage, we must remember that western Kansas is only half way up the ladder, and that according to some authorities the therapeutic value of climate begins at 4000 feet. With regard to dryness, however, the difference is great, and whatever advantages lie in greater amount of sunshine and greater dryness of air and soil are on the side of the western tier of counties. While altitude must remain a constant quantity, there is at least a possibility that increasing irrigation and cultivation may increase the humidity of the western counties.

Since both elevation and dryness gradually increase as we go westward, and since density of population decreases, the selection of any point near the center of the state would be in the nature of a compromise, sharing both the advantages and disadvantages of either end.

It is true that the state will not be wholly dependent on the state

sanatorium for the treatment of tuberculous citizens. Shacks and tents may be built in connection with state, county or municipal hospitals. The University of Kansas has now a group of eight shacks connected with the University hospital at Rosedale. Benefits of climate, if such exist, may be obtained in great degree by those patients who avail themselves of the fraternal or other institutions of Colorado or elsewhere. But the state sanatorium must or should be the center and model of tuberculosis treatment for the state. Its cost will be considerable, and the hospital part of it, at least, cannot be easily transferred to a new location. So the question of first location is an important one.

A possible final solution of the problem would be to have the sanatorium in the eastern quarter somewhere, and provide for a branch in the west if the climatic advantages of that region become scientifically established. A farm colony there, adapted for wholly arrested cases, and practically self-supporting, would not be beyond the range of possibilities. A first location, however, must be chosen; and with the data at hand it seems to me wisest to begin the enterprise well to the eastern part of the state. The east is the logical and almost necessary location for a hospital for advanced cases, and for a time, at least, the most convenient one for the treatment of curable cases. While climatic advantages may exist in the western part, their value is not sufficiently well established to outweigh the certain advantages of a location near the center of population.

As regards the precise locality, the writer has not the necessary data on which to found an opinion. These data concern topography and shelter, transportation, availability of land and nearness to large towns, besides water supply, drainage, and facilities for sewage disposal.

It has been demonstrated that a tuberculosis sanatorium offers no danger or inconvenience to the community in its vicinity, and there should be no objection to a chosen site on the part of the neighborhood. Further, we trust that the location of this institution may not be regarded in any way as a political asset, and that we can depend on all who are interested in the health of the state to keep any selfish political considerations out of the matter.

Forty years ago, yes, thirty years ago, exposure to cold air, or "drafts," was assigned as the cause of consumption. Now fresh air is the cure par excellence.

Tuberculosis Control in Kansas.

The fundamental principle underlying tuberculosis control is that of education. Tuberculosis is essentially a sociological and industrial problem, rather than, or at least before it is a medical one. Social and industrial conditions that contribute to the spread and dissemination of tuberculosis must be studied and corrected, and the people be taught the principles of sanitation and right living, before any appreciable results in tuberculosis control may be expected.

Tuberculosis is essentially a disease of the poor. The National Association for the Study and Prevention of Tuberculosis recently issued the statement that sixty-five per cent of those afflicted with the disease were too poor to purchase the necessary quality and amount of food or to affect a changed environment and the cessation of labor, which is absolutely essential for the cure of the disease. In other words, these sixty-five per cent were doomed to certain death so far as their own abilities or financial condition were concerned. It seems, therefore, to be necessary to put forth such efforts as we may to prevent the disease, rather than to hope for cure in this vast army of hopeless incurables.

Kansas, among about ten other states in the Union, has recognized the principle of prevention as being the most important and first step in tuberculosis control, and has given to the State Board of Health the sum of \$10,000 a year for two years, for the purpose of inaugurating a state-wide educational campaign, which is being accomplished through the medium of a traveling tuberculosis exhibit.

The exhibit is under the charge and direction of an expert on tuberculosis, who gives from two to one-half dozen lectures daily; part of the lectures being illustrated with the stereopticon. Accompanying the exhibit is also a visiting nurse, who assists in the demonstrations of the exhibit, gives a lecture to high-school girls and women only, and visits such cases of tuberculosis to which she can gain access through the family physician, giving them the necessary instructions as to preventing the infection of the members of the family, or of reinfecting themselves. A third party, in the shape of a helper, makes up the traveling force of the exhibit.

Special effort is made in each community visited to have all the school children and school teachers hear the lecture and see the exhibit, school being dismissed at least one day for that purpose. And thus the oncoming generation are being taught the principles

of hygiene and sanitation, the value of fresh air night and day and all the time, the baneful effects of alcohol and cigarettes, and of other forms of dissipation.

It is expected that at least one town in each county of the state will be visited during the two years for which the appropriation is made, and it is hoped that this two years' campaign will so stir the people as to insure the passage of a bill by the next legislature, creating a state institution for the care and treatment of advanced cases of tuberculosis, and for the treatment and cure of incipient cases.

Public Funds Big Aid in Tuberculosis Fight.

Percentage of Official Appropriations Rapidly Increasing.

As an indication of the force of the crusade against tuberculosis, the National Association for the Study and Prevention of Tuberculosis in a bulletin issued to-day points to the fact that while 53.5 per cent of the expenditures for tuberculosis in 1909 were made from public resources, appropriations made for 1910 indicate that over 75 per cent of the money to be spent this year will be from federal, state, city and county funds.

In 1909, out of the \$8,180,621.50 spent for the prevention and treatment of tuberculosis, \$4,362,750.03 was spent from public money, and \$3,817,871.47 from funds voluntarily contributed. For the carrying on of state, federal and municipal tuberculosis work in 1910, over \$9,000,000 has been appropriated. Of this sum, the state legislatures have granted \$4,100,000, the municipal and county bodies, \$3,975,500, and the federal government, \$1,000,000.

In the states in which the most preventive anti-tuberculosis work has been done, the percentage of public funds spent is the highest, while in states where little or no effort is being made to prevent tuberculosis, and the treatment of the disease alone has been considered, the percentage of public expenditures is very low. For instance, of the \$1,600,000 spent in New York in 1909, nearly 60 per cent was from state and city funds. In Massachusetts nearly two-thirds was from public money; in Maryland about one-half; and in Pennsylvania three-fourths. In Colorado, on the other hand, less than one per cent was from public money; in California about 15 per cent; and in Arizona none at all. These facts indicate, the National Association declares, that wherever an aggressive educational campaign has been carried on by private organizations, states and cities have been induced to make liberal appropriations for the prevention of tuberculosis.

Twelve years ago Massachusetts made the first appropriation for a state sanatorium. Since that time over \$10,000,000 has been appropriated by state legislatures for the prevention of tuberculosis and about an equal sum by municipal and county authorities. The federal government has over \$1,000,000 invested in tuberculosis hospitals, and spends annually about \$500,000 in their maintenance. Every year the percentage of appropriations made from public funds for tuberculosis work has increased.

While private societies have led the way in the tuberculosis campaign, every effort has been made to have states, cities and counties do their share. The bulletin of the National Association states that the final success of the antituberculosis crusade depends on every city and state providing funds to treat and prevent consumption.

Banner Year in Tuberculosis War.

More Organizations Formed and Institutions Established in 1909 Than ever Before.

Interest in the anti-tuberculosis campaign now being waged throughout the United States is evidenced by the fact that in the year 1909 163 new anti-tuberculosis associations were formed, 133 tuberculosis sanatoria and hospitals were established, and 91 tuberculosis dispensaries were opened. Compared with previous years, this is the best record thus far made in the fight against consumption in this country.

During the year 1909 forty-three more associations for the prevention of tuberculosis were formed than during the previous twelve months, and sixty-two more hospitals and sanatoria were established. On January 1, 1910, there were in the United States 394 anti-tuberculosis associations, 386 hospitals and tuberculosis sanatoria and 265 special tuberculosis dispensaries.

During the year that has passed the sanatoria and hospitals of this country treated over 31,000 patients, giving a total of nearly 3,200,000 hospital days' treatment. Of the 31,000 patients treated about one-half were discharged as improved to a greater or less extent, and a large percentage of the incipient cases were discharged as cured. Altogether there are nearly 20,000 hospital beds provided in the entire United States for tuberculosis patients, or about one bed for every 30 patients. The 386 associations have 60,000 members and are contributing close to a million dollars every year for the fight against tuberculosis. The 265 dispensaries treated during the year over 60,000 patients, who made over 500,000 visits.

The following table shows the results of the year 1909 compared with previous years:

	YEAR.	Sanatoria and hospitals.	Associa- tions.	Dispen- saries.
Before	1905.....	115	24	19
During	1905.....	15	13	5
"	1906.....	17	25	11
"	1907.....	35	49	51
"	1908.....	71	120	88
"	1909.....	133	163	91
Total Jan. 1, 1910.....		386	394	265

If the year that has passed has been a record-breaker in point of numbers, it has also broken many records in point of interest which it has aroused. Never before have so many different groups been working for one common end. At the present time, schools, women's clubs, labor unions, churches, children's organizations, state legislatures, municipal bodies, insurance companies, fraternal organizations, billposters, laymen and doctors of every creed and color are all banded together in one effort to rid this country of consumption.

Millions Spent in Tuberculosis Crusade.

Survey of Year's Work Gives Interesting Figures.

Based on reports gathered from all parts of the United States, the National Association for the Study and Prevention of Tuberculosis issues a bulletin to-day in which it is stated that \$8,180,621.50 was expended during the year just closed by the various interests fighting consumption in the United States. The bulletin, which is preliminary to a longer report, shows that in the year 1909 over 10,000,000 pieces of literature were distributed, and that 117,312 patients were treated and assisted by the sanatoria, dispensaries and antituberculosis associations.

By far the largest amount of money spent during the past year was for the treatment of tuberculous patients in sanatoria and hospitals, \$5,292,289.77 being expended in this way. The antituberculosis associations spent \$975,889.56, the tuberculosis dispensaries and clinics, \$640,474.64, and the various municipalities, for special tuberculosis work, spent \$1,111,967.53. The antituberculosis associations distributed the most literature, spreading far and wide 8,400,000 copies of circulars, pamphlets and other printed matter, for the purpose of educating the public about consumption. The health departments of the different cities also distributed more than 1,056,000 copies, which, with the work done by state depart-

ments of health, brings the number of pieces distributed during the year well over 10,000,000. The largest number of patients treated during the year was by the dispensaries, where 61,586 patients were given free treatment and advice. The sanatoria and hospitals treated 38,758 patients, while antituberculosis associations assisted 16,968.

New York state leads in the antituberculosis work done during the past year, having spent more money, distributed more literature and treated more patients than any other state. Pennsylvania comes next, and Massachusetts is third. The next seven states are Illinois, Maryland, New Jersey, California, Colorado, Connecticut and Ohio. The following table shows the work done in these ten states:

State.	Expenditures.	Literature, pieces distributed.	Patients treated.
New York.....	\$1,669,179 76	4,997,600	41,779
Pennsylvania.....	1,515,664 02	251,300	24,410
Massachusetts.....	1,059,123 53	217,605	10,645
Illinois.....	202,820 53	254,500	4,826
Maryland.....	195,691 07	29,500	5,829
Ohio.....	245,502 17	127,000	3,197
New Jersey.....	211,660 62	287,500	2,159
Colorado.....	566,205 17	37,000	3,229
California.....	254,707 14	107,075	1,900
Connecticut.....	220,190 98	13,500	1,141

Although the survey of the past year's work shows that much has been done, the reports from all parts of the country indicate that next year the amount of money to be expended, and the actual number of patients that will be treated, will be more than double that of the past year. For instance, special appropriations have been made in the various municipalities for next year's antituberculosis work, aggregating \$3,976,500. In addition to these appropriations, over \$4,000,000 has been set aside by the different state legislatures for the campaign against tuberculosis next year. Besides these sums, a large number of the present existing institutions and associations are planning enlargements of their work, and new organizations are being formed daily.

Tuberculosis not Sufficiently Taught in Schools.

Only Small Percentage of Children Receive Proper Instruction.

Definite instruction concerning the nature and methods of prevention of tuberculosis is being given to less than six per cent of public school children of the United States, according to a bulletin issued to-day by the National Association for the Study and Prevention of Tuberculosis.

Recent investigation has shown that in only nine cities—Wash-

ington, D. C., Dallas, Tex., Richmond, Va., Poughkeepsie, N. Y., Detroit, Mich., Malden, Mass., Salem, Mass., Saginaw, Mich., and Knoxville, Tenn.—are special textbooks being used or lectures being given about tuberculosis. In three states and one territory—Michigan, Massachusetts, North Carolina and Porto Rico—laws have been passed requiring that instruction about the nature and methods of prevention of tuberculosis be given in all public schools. In Tennessee the State Department of Education has requested that such instruction be given, and has issued circulars for this purpose. In New Jersey and West Virginia wall-cards giving instruction are hung in every schoolroom and the attention of all children is called to them. The actual number of children, however, who will this year be taught by their teachers that tuberculosis is a communicable, infectious disease, and that it can be prevented, will not exceed 1,000,000. If the state laws requiring such instruction were strictly enforced, at least 2,000,000 children would be reached.

While tuberculosis does not cause as many deaths among school children as it does among workingmen or among infants under five years of age, the National Association gives some figures to show how serious the disease is among this class. Based on the census of 1900, it is estimated that nearly 100,000 children now in school will die of tuberculosis before they are eighteen years of age, or that about 6400 die annually from this disease. Estimating that on an average each child who dies of tuberculosis has had six years of schooling, the aggregate loss to the country in wasted education each year amounts to \$1,152,000. According to investigations made in New York, Boston and Stockholm, the percentage of children who are afflicted with tuberculosis is much larger than the death rate would indicate.

The National Association for the Study and Prevention of Tuberculosis declares that there are two ways of checking the ravages of tuberculosis among school children. The first way is to instruct every school child about the dangers of the disease, and to show them how they themselves may prevent tuberculosis in their homes. The second method is to establish open-air schools for all children who have tuberculosis or who are suspected cases, segregating them from the healthy children.

True democracy is that which enables one to address a king without embarrassment or a beggar without condescension.—*Rev. Dr. Estey.*

Tuberculosis Notes.

The Fight Against Consumption All Around the World.

Tuberculosis is essentially a house disease.

An All-Russian Anti-Tuberculosis Association has been formed, with headquarters at Moscow.

Iceland has a Society for the Prevention of Tuberculosis and is building a \$75,000 sanatorium to accommodate fifty or sixty patients.

According to the statement of a Greek pastor, of Lowell, Mass., sixty per cent of the large Greek population in that city are afflicted with tuberculosis.

Societies for the promotion of public health measures, and particularly for the erection of tuberculosis sanatoria, have been formed in Bosnia and Herzegovina.

Federal meat inspectors have shown that two per cent of the 56,000,000 hogs in this country a year ago, and valued then at \$339,000,000, were affected with tuberculosis.

London has three open-air schools for tuberculous children. Similar institutions have been established in the United States in Providence, Boston, New York, Pittsburg, Chicago, Hartford, Conn., Brookline, Mass., and Rochester, N. Y.

A bill will be brought before the new British Parliament, calling for steps to be taken to prevent the high mortality from tuberculosis in Ireland. The bill will demand the compulsory notification and registration of tuberculosis cases, the establishment of special institutions for consumptive patients, the instruction of the public about this disease, and improved control over the meat and milk supplies.

The death rate per 10,000 from tuberculosis in Victoria, Australia, has fallen from 14.58 in 1890 to 9.58 in 1907, and in Melbourne and suburbs from 20 in 1890 to 11.6 in 1907. The fall is attributed to the aggressive campaign against this disease, including the registration of tuberculosis cases, the erection of institutions for treatment and the general improvement of sanitary and working conditions.

Efforts are being made in Bulgaria to abolish the numerous monasteries and convents of the Greek Catholic Church and to use their buildings and revenues for the establishment and main-

ténance of tuberculosis sanatoria. King Ferdinand has given 100,000 francs for the erection of a national sanatorium. The death rate from tuberculosis in Bulgaria is very high, being 31 for every 10,000 living.

Under legislation enacted in 1905 the Danish government pays three-fourths of the expenses of all poor persons who desire to be treated in tuberculosis sanatoria. When the hospitals under construction are completed, Denmark will have one bed in tuberculosis hospitals or sanatoria for every 1200 inhabitants, a fact which will mean that the length of treatment can be considerably extended. In the United States there is one bed for every 4500 inhabitants.

The Newfoundland Society for the Prevention of Tuberculosis is carrying on a vigorous and necessary campaign this year in the island. The death rate from the disease in Newfoundland is very large. About one in every five of the total population dies of it, and, what is worse, in the last six years the death rate, which is stationary or decreasing elsewhere, has increased about 50 per cent. This is due largely to the native horror of fresh air in the house.

State Board of Health Notes.

The State Board of Health has dealt "contract practice" a body blow, and raised the standard for membership in the sanitary organization of the state by the following letter to the boards of county commissioners:

DECEMBER 28, 1909.

To the Honorable Board of County Commissioners, The County Board of Health:

GENTLEMEN—I desire to call your attention to a practice that seems to prevail in the majority of the counties of this state of calling for competitive bids in the case of the appointment of county health officer, and the awarding of such a position to the lowest bidder, which practice, in the opinion of the attorney for the State Board of Health, is illegal. I quote from the opinion of the attorney as follows:

"The statute governing the election of the county health officer is section 7216, General Statutes of Kansas, 1905, which provides as follows:

"The county commissioners of the several counties of this state shall act as local boards of health for their respective counties. Each local board thus created shall elect a physician, preference being given to adepts in sanitary science, who shall be *ex officio* a member of said local board and the health officer of the same.

"This statute expressly provides that the person to be elected shall be a physician, and also that in his selection the preference shall be given to an adept in sanitary science, and this is binding upon the board of county commissioners.

"The calling for competitive bids in such a case is equivalent to an agreement to select the person who will agree to act for the lowest price.

"In my opinion, it was not the intention of the legislature that the health officer should be selected in this manner. It is manifest that where the selection is made by the local board on competitive bid, that instead of preference being given to an adept in sanitary science, the preference in that case would be given to the applicant who rated his services the cheapest. In my opinion, such action on the part of the board of county commissioners is not only in violation of the spirit but also of the letter of said statute, and is contrary to law."

I trust, therefore, that in the selection of the health officer, if the above practice prevails in your county, it will be discontinued, and that the appointment will be made with special reference, as contemplated in the law, to the fitness of the physician for the position.

In this connection, I desire to again call your attention to the many new and important duties of the health officer. In addition to his work as the executive officer for your county board of health, and as general supervisor over the sanitary affairs of your county, he is the local registrar of vital statistics, the supervisor and enforcer of the quarantine law, the inspector of slaughterhouses and meat markets, barber shops and hotels, public and private schools, jails, poorhouses, and other public buildings, and to him is specially delegated the enforcement of the law for tuberculosis control, which law is among the most important that has ever been placed upon the statute books. It must be self-evident, therefore, that your selection of county health officer should be a man particularly well qualified, not only as a physician, but as an executive officer, and that you should, as the county board of health, provide him with such ways and means, as well as such an adequate salary, as will enable him to put into successful effect these most important laws and duties, and that will adequately compensate what is now the most important office in the county, that of the county health officer.

Cordially yours, S. J. CRUMBINE, M. D., *Secretary.*

Tuberculosis may be a water-borne disease.

Publicity is the pledge and proof of honesty.

A great number of incorrigibles are mouth breathers.

The sanitary consciousness of the state is awakening.

Vital statistics is the bookkeeping of sanitary science.

Every person should have 1800 cubic feet of fresh air per hour.

A Chinaman's salutation—"How many smells have you smelled today?"

A bulldog is a winner because he gets a grip in the right place and holds on.

A truthful epitaph for most of the men who fail would be, "He lost his nerve."

Three-fourths of the schoolhouses are constructed with entire disregard to sanitation.

Forty-eight per cent of all the school children of New York were found to have defective vision.

Ophthalmia Neotorum is the direct cause of total blindness in 28 percent of the inmates of the schools for the blind.

Disinfection after removal or death of all cases of tuberculosis are required by law before the premises are again occupied.

"We hope some day to issue a permit for the burial of the last doctor who thinks he can diagnose diphtheria and smallpox with his nose."— *Chapin*.

The state, in making attendance on school compulsory, necessarily assumes the responsibility of the physical well-being of the child while attending school.

The old idea that removal of the tonsils affected the voice is no longer tenable, but it can be proven by the experience of physicians that their removal is a positive benefit to the singer in every way.

A recent and successful vaccination gives immunity from smallpox more certainly and for a longer period of time than an attack of mild smallpox, such as has been prevalent in Kansas for the past few years.

The Kansas State Medical Society loses its representation to the great meeting called for the revision of the United States Pharmacopœia by reason of the fact that it is not incorporated. Why not incorporate it?

If the educational antituberculosis propaganda of the State Board of Health can be continued, the department ventures the prediction that the death rate from tuberculosis will be reduced one-half in ten years.

Adenoids may result in arched palate, deformed teeth, short upper lip, defective hearing, mouth-breathing, lowered bodily resistance, stunted growth and development, and a fertile field to propagate the bacilli of diphtheria and tuberculosis.

 "Smile
 Awhile
 And when you smile
 Another
 Smiles
 And soon there's miles
 And miles
 Of smiles
 And life's worth while
 Because you smile."

When it All Started.

When Adam met Eve he was bashful and shy,
And he stammered and blushed every time she came
nigh,
Till at last he grew bold and began to pay court
(You may put all your trust in this faithful report),
And he murmured to her on an evening serene:
"You're the prettiest girl that I ever have seen" —
And that's how *that* started.

When Eve, with a beautiful blush on her face,
Yielded shyly and sweetly to Adam's embrace,
And put up her red lips for the true lover's pact
(You may set all this down as an absolute fact),
She inquired, while he breathed the fond names on
his list:
"Have you said that to all of the girls you have kissed?"
And that's how *that* started.

When Adam asked Eve if she would be his bride,
She looked up and looked down, and she sighed and
she sighed,
And she let him take hold of her lily-white hand
(This is history now, as you must understand),
Then she said in a voice that was dulcetly low:
"I must take time to think. 'Tis so sudden, you know."
And that's how *that* started.

When they had been married a few years or so,
Then Adam told Eve: "We're invited to go
To a dinner and dance with some friends down in Nod."
(This is truly authentic, although it sounds odd.)
Eve replied, with a sad and a sorrowful air:
"I can't go. Don't you see I have nothing to wear?"
And that's how *that* started.

Wilbur D. Nesbit, in Life.

BULLETIN
OF THE
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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 4.

APRIL, 1910.

VOL. VI.

FLY BULLETIN.

SWAT THE FLY!

WICHITA DEACON

VITAL STATISTICS

Reported to the Kansas Board of Health for March, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

Allen	6	6	0	0	0	0	2	0	7	0	30	1
Anderson	1	1	0	0	0	0	0	0	0	0	1	1
Atchison	0	0	0	0	0	0	2	0	0	0	4	0
*Barber	0	0	0	0	2	0	0	0	0	0	10	1
Barton	0	0	0	0	0	0	2	1	0	0	0	0
Bourbon	0	0	0	0	0	0	2	0	0	0	1	0
Brown	5	3	3	1	0	0	2	0	0	0	1	0
Butler	0	0	0	0	0	0	0	0	0	0	3	0
Chase	0	0	0	0	0	0	1	0	0	0	0	0
*Chautauque	0	0	0	0	0	0	0	0	0	0	0	0
Cherokee	3	3	1	1	3	3	6	0	0	0	5	0
Cheyenne	0	0	0	0	1	0	0	0	0	0	2	0
Clark	0	0	0	0	2	1	0	0	0	0	0	0
Clay	0	0	0	0	1	0	0	0	0	0	1	0
Cloud	0	0	0	0	0	0	1	0	0	0	1	0
Coffey	1	1	0	0	0	0	2	0	1	0	3	0
Comanche	0	0	0	0	0	0	0	0	0	0	7	0
Cowley	2	2	0	0	3	0	4	1	0	0	1	0
Crawford	2	2	0	0	0	0	1	0	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	2	0	3	0
Dickinson	0	0	0	0	2	0	0	0	0	0	12	0
Doniphan	1	1	0	0	0	0	2	1	2	0	20	1
Douglas	2	1	0	0	1	0	3	0	0	0	5	0
Edwards	1	0	0	0	0	0	4	0	0	0	15	0
*Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellis	0	0	0	0	1	1	1	0	0	0	2	0
Ellsworth	0	0	0	0	0	0	0	0	1	0	10	0
Finney	0	0	0	0	0	0	2	0	0	0	1	0
Ford	2	2	0	0	0	0	5	1	0	0	3	0
Franklin	4	2	0	0	2	0	0	0	0	0	300	2
Geary	1	1	1	0	3	0	0	0	0	0	54	1
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	4	0	1	0
Grant	0	0	0	0	0	0	0	0	0	0	0	0
*Gray	0	0	0	0	0	0	0	0	0	0	0	0
*Greeley	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood	1	1	0	0	0	0	1	0	0	0	8	0
Hamilton	0	0	0	0	0	0	1	0	0	0	0	0
*Harper	0	0	0	0	0	0	0	0	0	0	0	0
Harvey	1	0	0	0	0	0	1	0	24	0	27	0
Haskell	0	0	0	0	0	0	0	0	0	0	5	0
Hodgeman	0	0	0	0	1	0	0	0	0	0	10	0
Jackson	0	0	0	0	0	0	2	0	0	0	15	0
Jefferson	2	1	1	0	0	0	3	0	2	0	15	0
Jewell	0	0	0	0	0	0	0	0	0	0	1	0
*Johnson	0	0	0	0	0	0	0	0	0	0	0	0
Kearny	0	0	0	0	0	0	0	0	0	0	0	0
Kingman	1	1	1	1	0	0	1	1	2	0	1	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	0	0	0	0	0	0	0	0	5	0
Lane	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth	1	1	0	0	5	1	1	0	0	0	4	2
Lincoln	2	2	1	0	0	0	0	0	0	0	0	0
Linn	0	0	0	0	5	0	5	0	0	0	10	0
*Logan	0	0	0	0	0	0	0	0	0	0	0	0
Lyon	9	8	1	1	1	1	1	1	6	0	45	0
Marion	0	0	0	0	0	0	1	0	0	0	0	0
Marshall	0	0	0	0	1	1	10	0	0	0	25	0
McPherson	0	0	1	1	4	0	3	0	0	0	33	1

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTRIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths...			Cases...	Deaths...					Cases...	Deaths...
Meade.....	3	2	0	0	0	0	2	0	0	0	0	0
Miami.....	0	0	0	0	0	0	0	0	1	0	7	0
Mitchell.....	4	3	1	0	0	0	10	2	0	0	13	0
Montgomery.....	3	3	2	1	1	0	9	0	62	0	143	3
*Morris.....												
Morton.....	0	0	0	0	0	0	0	0	0	0	4	0
Nemaha.....	0	0	0	0	0	0	14	0	0	0	21	0
Nessho.....	2	1	1	0	0	0	0	0	3	0	511	4
Ness.....	1	1	0	0	0	0	25	0	0	0	0	0
Norton.....	0	0	0	0	0	0	0	0	0	0	5	0
Osage.....	1	1	3	0	1	0	22	1	0	0	23	0
Osborne.....	0	0	0	0	0	0	4	0	0	0	2	0
*Ottawa.....												
Pawnee.....	1	1	0	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie.....	0	0	0	0	3	0	1	0	0	0	15	0
Pratt.....	0	0	0	0	9	1	2	0	1	0	10	1
*Rawlins.....												
Reno.....	1	0	1	0	0	0	2	0	17	0	15	0
Republic.....	0	0	2	0	1	0	4	0	0	0	3	0
Rice.....	1	1	0	0	0	0	0	0	0	0	5	0
Riley.....	1	0	0	0	0	0	7	0	0	0	2	0
Rooks.....	0	0	3	1	0	0	0	0	1	0	0	0
Rush.....	1	0	0	0	0	0	0	0	3	0	2	0
Russell.....	1	1	0	0	0	0	6	1	5	0	4	0
Saline.....	1	0	0	0	0	0	3	0	1	0	32	0
Scott.....	0	0	0	0	0	0	0	0	14	0	0	0
Sedgwick.....	0	0	0	0	0	0	10	1	0	0	59	0
Seward.....	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee.....	3	1	0	0	1	0	2	0	0	0	13	0
Sheridan.....	0	0	0	0	1	0	2	0	1	0	9	0
Sherman.....	1	1	0	0	0	0	0	0	0	0	0	0
Smith.....	1	0	0	0	0	0	3	0	0	0	0	0
Stafford.....	0	0	0	0	0	0	2	0	0	0	26	0
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	2	2	0	0	0	0	3	0	0	0	38	0
Thomas.....	0	0	0	0	0	0	1	0	0	0	2	0
*Trego.....												
Wabauzsee.....	1	0	0	0	2	0	0	0	0	0	53	0
Wallace.....	0	0	0	0	0	0	0	0	0	0	2	0
Washington.....	1	1	1	0	0	0	0	0	6	0	2	0
Wichita.....	0	0	0	0	0	0	0	0	0	0	2	0
*Wilson.....												
Woodson.....	1	1	0	0	0	0	0	0	0	0	0	0
Wyandotte.....	0	0	0	0	3	0	1	0	2	0	1	0
Cities:												
Fort Scott.....	1	1	0	0	0	0	0	0	0	0	140	2
Atchison.....	0	0	2	0	0	0	1	0	4	0	1	0
Coffeyville.....	0	0	1	0	2	0	4	0	30	0	5	0
Kansas City.....	13	12	11	5	19	2	40	2	16	0	206	2
Leavenworth.....	6	5	15	0	2	0	1	0	4	0	44	0
Parsons.....	1	1	0	0	0	0	0	0	0	0	142	0
Pittsburg.....	0	0	0	0	6	0	11	2	0	0	5	0
Topeka.....	6	6	0	0	14	2	5	1	6	0	143	3
Wichita.....	5	4	0	0	4	0	4	0	13	0	187	2
State Institutions.	1	2	0	0	0	0	0	0	0	0	12	0

* No reports.

It is not so much what you eat as what you digest that determines the value of the food consumed.

Is there any reason why a train porter or passenger brakeman should not be required to pass an examination in car ventilation as well as for color blindness and train signals?

COMMON HOUSE FLY (*Musca domestica*).

Prof. Wm. A. Riley, in *Science* for February 18, 1910, calls attention to the fact that we are only now putting to the test the theory of Kircher, propounded and published in Rome in 1658, that flies play an important role in the transmission of disease. Kircher's remarkable statement, viewed in the light of our present-day knowledge, shows him to be a close observer, with a clear knowledge of supposed facts which in recent years have been scientifically demonstrated as such. He wrote as follows:

"There can be no doubt that flies feed on the internal secretions of the diseased and dying, then flying away, they deposit their excretions on the food in neighboring dwellings, and persons who eat it are thus infected."

Professor Riley then continues the translation from this same article, recounting a tragic yet rather amusing incident related to prove his theory of insect transmission of disease:

"Apropos of the present-day belief that bloodsucking and stinging insects may occasionally be direct inoculators of disease germs,



the following statement from the same work is of interest: 'In a recent plague in Naples, while a certain nobleman was looking out of a window a hornet flew in and lighted on his nose, and, stinging him with the sharp point of its proboscis, caused a swelling. And

when the poison had gradually spread and crept into the vital organs, within a space of two days (without doubt from the contagious humors which the insect had sucked up from a corpse), he contracted the disease and died.'"

It is said also that a celebrated Italian physician, by name Mercurialis, who lived from 1530 to 1607, held to the same theory, although the scientists and physicians of his day gave his statement scant credence, and thus, like many similar theories, discoveries and reforms, the centuries went by before this momentous fact was rediscovered, and again stated in terms to arouse the interest and attention of the civilized world. Verily, "there is nothing new under the sun."

What the present status of preventive medicine might have been had Kircher's dictum been accepted is, of course, entirely speculative, but it is reasonable to suppose that preventive medicine would

have been placed on a sure foundation a century before it was, and that the problem of fly extermination, which is now engaging the attention of the world, would have been solved and its history now have been but a memory. And who would dare to reckon the lives that would have been saved and the treasure that has been wasted during all the years from Kircher's time until now. The writer believes that it is the duty of every patriotic citizen to do what he can in the international campaign for the destruction of our common enemy, the fly.

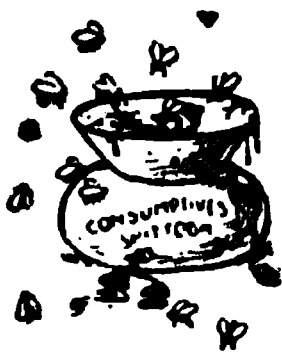
It is to be noted that the sanitary conscience of the people is awakening, and it is beginning to be understood that a successful warfare against typhoid fever and tuberculosis and the intestinal diseases of childhood must, if successful, include measures looking toward the elimination of infection by the fly. This warfare must consist primarily of an educational campaign, in which certain facts concerning the breeding place and habits of the fly are clearly set forth, together with unmistakable proofs of the dangers of harboring this insect in the home or store where food products are exposed for sale, and of practical suggestions to prevent his breeding, and for his extermination as speedily as possible.



BREEDING PLACES.

The principal breeding places of the common house fly are in decaying animal and vegetable matter, outside privy vaults, and in barnyard manure, particularly horse manure. It is estimated that from 85 to 90 per cent of the house flies are born and reared in ordinary horse manure. The average time from the laying of the eggs in the breeding place until the development of an adult fly is about ten days. The eggs hatch in from fourteen to twenty-four hours, producing the larval stage, which are commonly known as maggots or worms. This stage lasts from five to seven days, depending largely upon moisture and temperature. At the end of this period they seem to seal themselves within their skin, forming a hard case around them, and often burying themselves in the soil; they are now known as pupæ, this stage lasting about five days, during which time the remarkable transformation into a fly occurs, when they emerge from their shell in the shape of an adult fly; and thus the life cycle is completed.

The average female lays about 120 eggs, and it is estimated that in the temperate zone of Kansas these 120 eggs are multiplied from twelve to thirteen times. Assuming that one-half of the eggs produce female flies, and that one-half of the total number of larvæ



are destroyed by their natural enemies before their transformation into the adult fly, the remaining number of progeny of a single female fly during the course of a summer season would make a total in figures which is appalling. Try to figure it out, and after you have arrived at the correct result you will begin to realize the importance of doing something to prevent the breeding of flies.

HABITS.

Naturally insects that are bred and reared in filth would be expected to have filthy habits. This proposition not only applies to the individual of the genus *Homo*, but also to the individual of the genus *Musca domestica*. And thus we find that the common house fly continues the filthy habits of his early life, feeding on the filth of the barnyard, the outside privy vault and decaying animal and vegetable matter wherever found.

The odor of food in house and stores, together with the warmth and protection afforded therein, makes these places a desirable home for the fly; and while as above stated he is fond of filth, yet he also relishes most all kinds of foods, particularly those containing sugar or milk, and all kinds of meats. It can reasonably be expected that a fly having just gained entrance into the house has come from some filth producing or disease breeding place, and it is because of this that his presence in the house or in the store or shop becomes exceedingly dangerous. This is particularly true of flies that breed in human excrement, carrying, as they may do, the germs of intestinal diseases, such as cholera, dysentery, or typhoid fever, from their breeding place to foods or drinks.

The experiments and observations of this department are in entire accord with that of other state departments of health, which warrants the belief that a very large portion of the cases of typhoid fever and the intestinal diseases of childhood are undoubtedly due to the infection of food or milk by the fly.

Moreover, it has been demonstrated that the living, virulent germs producing tuberculosis may be disseminated by the house fly, either by carrying the infectious material upon his legs, after having fed upon such sputum, or by depositing fly specks containing the germs of the disease upon the food. Flies that have been experimentally fed upon tubercular sputum have passed the tubercular bacilli in a living, virulent state, and one eminent bacteriologist reported that a single fly speck con-



tained as many as 5000 tubercular germs. In a former BULLETIN this department reported the result of examination of fly specks found upon a lemon pie in a certain bakery in this state, which was to the effect that the fly speck contained germs belonging to the fermentation group of bacteria; but what was worse, it also contained a large number of pus-forming germs.

“How doth the busy little fly
Improve each shining minute,
And where he finds an apple pie
Plants micro-millions in it.”

It would seem, therefore, that the regulation of the State Board of Health requiring food products to be protected from the depredations of the fly are in accord with scientific findings ascertained by the department.

It might be well to remark here that this regulation will be strictly enforced to the letter.

NATURAL ENEMIES.

The house fly has a number of natural enemies, which greatly reduce the numbers. First there is the worm known as the house centipede, which devours the fly in great numbers. There are also certain predatory beetles that devour the pupæ; also several fungous diseases, as well as a reddish mite that is very destructive to the fly in the latter part or near the close of the fly season. Flies are often found sticking to the window pane, with a whitish looking material radiating from the fly upon the glass in every direction, which is an illustration of death caused by the fungus growth upon the fly.

PREVENTION.

The final solution of the fly nuisance must rest entirely on prevention; that is to say, to do away with his breeding places. His destruction, after being born, can never be accomplished, as they come in such great multitudes as to make that task too great. The majority of the house flies being reared in horse manure would seem to point the way for the successful abatement of the fly nuisance. Indeed, it is now thought by sanitarians that if these places were either properly and effectively screened from the fly, or were disposed of by cremation or buried or scattered upon the fields of the farms, and if the outside privy vault was made fly-proof, and every householder was careful that no decaying animal or vegetable matter was permitted upon his premises, the fly would be very largely and quickly exterminated.

Surely the time is coming, since it is now an accepted fact that

the fly is a source of danger in the community, that such steps should be taken by the state and the municipalities as would without unnecessary delay accomplish his destruction.

SCREENS.

The next step in prevention is that of thorough screening of all places where foods are manufactured, prepared or sold, including, of course, the home. It is particularly important that the sick room be kept absolutely free from flies, especially where there is one suffering from tuberculosis or typhoid fever. It is quite as important that this should be done as that the mosquito should be kept out of the room containing the yellow fever or malarial pa-

tient. Until recent years screens have been used principally to exclude the fly and mosquito solely on the ground of personal comfort; but now we know that the principal benefit derived from the use of screens is that of preventing sickness and disease.

Among other preventative measures is that of fly paper, both poison and sticky, fly traps and the fly-swatter, all of which are of various degrees of utility.

The national campaign which is now on, under the direction of the committee of the American Civic Association, augurs well for a successful issue between the common house fly and the people.

Death to the Fly.

We are, among other things, a forehanded race, which is plentifully evidenced just now when the mercury is climbing down to the south end of the tube by our planning a campaign against the house fly when he shall merrily buzz into our daily life next summer.

We hate the house fly. Not personally, but because scientists have assured us he is a disease breeder, carrying germs from affected to healthy communities and raising Cain generally.

With a view to making this more clear to persons who want to be shown all the time, moving-picture studies of the fly have been made and exhibited in Washington under government auspices, the crusade having been inaugurated by a committee of scientists and business men headed by Mr. Edward Hatch, jr., of New York.

Incidents of the daily life of the fly, including his great specialty of toting exceedingly objectionable and sometimes deadly germs, are plainly shown and have only to be seen to convert the entire community into a swatting committee that will only disband when the last fly has disappeared.

Just why the fly was created we know not. He seems to have no friend on earth just now, and barring emigration extermination seems to be the fate in store for him.— Editorial, *Evening Telegram*.

Physicians should be on the lookout for, and report to this department immediately, cases of acute anterior poliomyelitis that may occur during the coming season.

A municipal corporation is under the same obligation as a private corporation or an individual to dispose of its wastes in such a manner as will not work an injury to its neighbors.

The Potency of One Fly.

In the summer time, when it's nice and cool out on the front veranda where the breeze isn't hindered by screens, it's perfectly all right to while away the hours there. But there's one thing that must be avoided. Don't let that little fly that's buzzing around in the vicinity alight on you. Because, well, because the entomological bureau of the Department of Agriculture has just issued a bulletin which intimates that there's only about one thing more dangerous than the common, everyday house fly—and that's a Gatling gun.

According to this bulletin, which was written by L. O. Howard, Ph. D., the chief of the bureau, the house fly, which was once looked upon as a scavenger and general aid to humanity, is a sort of cross between a destroying angel and the general press representative of the medicine trust. For this little fly lives only for the purpose of acting as a freight train for the output of Germville. Just to prove the assertion, Mr. Howard cites a case where 6,600,000 germs of various kinds were found on one fly.

The carrying of typhoid germs, Mr. Howard says, is the fly's chief asset, but in addition the insects manage to distribute a few hundred thousand tuberculosis, cholera infantum and dysentery bacilli. As a general thing, every fly carries about a quarter of a million bacilli and spends most of the summer months in scattering free samples everywhere he goes. The reproduction of one fly can amount to 3,888,000,000 flies in one summer.

Mr. Howard advises the careful collection of garbage in cans, watertight floors for stables, absolute cleanliness and careful inspection by board of health employees. Neglected premises should be watched, he says, and more attention should be given flies by farmers who now spend most of their time in trying to kill boll weevils or potato bugs.

Mr. Howard also tells of a system in the District of Columbia which provides against the contamination of exposed food by flies. All stores, markets, cafes, luncheon rooms, or any other place where foods or beverages are manufactured or prepared for sale, stored for sale or offered for sale, must be registered to facilitate inspection. Still more recent ordinances provide for the registration of stables.

Mr. Howard says that failure to destroy house flies in a community is a blot on civilized methods of life.—*Kansas City Star.*

The Flies.

Charlie Bliss, editor of the *Montgomery News* and "poet laureate" of Illinois, discourses in this fashion on a familiar subject:

"The flies, the flies, the pesky flies, they crawl upon the bread and pies, and on each bite of food we eat they wipe their nasty, dirty feet. They buzz around defying foes, they dance upon your face and nose, and then without apparent fear they dig and tunnel in your ear. They light upon your hairless head at early dawn when you're abed. They fly and frolic everywhere and make the housewives almost swear. They fall down in the crock of cream; they get mixed up in the raisin cake and all the housewife tries to bake; they drop down in the coffee cup and in the 'lasses get mixed up. With nimble feet and active wing they leave their germ on everything, and then their presence they explain with dots upon the window pane. Then bring the swatter forth and swat and teach the flies they must not dot; bring out the sticky paper sheet that nabs the insects by the feet and holds them struggling for their breath until they die a lingering death. But do not use the ancient trick and dope the flies and make 'em sick, for this will cause them, so they say, to dot their little lives away."

House Fly a Pest.

The common house fly hardly can be denounced enough, says Prof. George E. Beyer, who delivered the second of three consecutive lectures on insects and their relation to disease at the Hutchinson Memorial.

TYPHOID FLIES.

Spring is coming. Already in our midst the house fly, the dirty fly, the typhoid and cholera infantum fly, will soon swarm in thousands and millions, unless precautions are taken. The house fly, whom we were taught in our childhood to treat with kindness, has been exposed. Its habits are filthy. It breeds in stables and garbage pails and carries the filth it revels in and tracks it across the sugar, the butter and the beefsteak. It paddles its horrid feet, gummed with the vilest rotting matter, in the baby's milk. The doctors have declared war on the house fly. It probably disseminates every disease. It is a nuisance. It must be exterminated. It can be driven out of every city. In an age of knowledge, screens and cheap disinfectants there is no excuse for flies in any household. Clean up your premises and report to the health department your neighbor who does not. Get rid of breeding places of flies and you will get rid of flies.

There is no family so poor it cannot afford to screen its home. Screens will turn away all flies as well as mosquitoes. The un-screened house, in other words, is a dangerous thing, and screens on windows and outside doors are an excellent investment from several points of view.

How to Kill Flies.

To clear room of flies, carbolic acid may be used as follows: Heat a shovel or any similar article and drop thereon twenty drops of carbolic acid. The vapor kills the flies.

A cheap and perfectly reliable fly poison, one which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram, which can be bought at any drug store, in two ounces of water, and add a little sugar. Put some of this solution in shallow dishes and distribute them about the house.

Sticky fly paper, traps and liquid poisons are among the things to use in killing flies, but the latest, cheapest and best is a solution of formalin or formaldehyde in water. A spoonful of this liquid put into a quarter of a pint of water and exposed in the room will be enough to kill all the flies. They seem to be fond of this water. Care should be taken to place it beyond the reach of children.

To quickly clear the room where there are many flies, burn pyrethrum powder in the room. This stupefies the flies, when they may be swept up and burned.

If there are flies in the dining room of your hotel, restaurant or boarding house, complain to the proprietor that the premises are not clean.

Teaching Sanitation in Public Schools.

One of the burning needs of the times, in view of the now proven facts concerning the prevention of disease, is to place those facts within the reach and understanding of every citizen of the republic, which can best be accomplished through that most popular of American institutions, the public school. It is extremely gratifying, therefore, that publications have recently appeared that most admirably meet that need, such as the *Primer of Sanitation*, by John W. Ritchie, published by the World Book Company, and the *Gulick Hygiene Series*, published by Ginn & Co.

The State Board of Health most cordially recommends these or similar publications to be used as textbooks in the public schools

of the state, and ventures the prediction that when the glad day comes when personal and public hygiene is regularly and intelligently taught in the public schools of the country, within a generation one-third to one-half of the preventable cases of sickness and death will have been eliminated. May God speed the day!

A Fly Ordinance.

The extermination of the fly in any community must necessarily rest upon and be determined by such means and measures, or the lack of the same, as may or may not be adopted by the authorities of that community. The state has conducted an educational campaign showing the dangers of the house fly, in that they are the carriers of disease germs and filth to food products, and has required that all foods, drinks and drugs sold or offered for sale in Kansas must be properly and effectively protected from contamination by the fly, but the state department of health cannot undertake the supervision or policing of the hundreds and thousands of breeding places of flies that are found in every city in the state; that must be left to the respective cities.

The following ordinance is one sent out by the Indiana State Board of Health to the mayors of the cities of that state, and it is urgently recommended that every city in Kansas adopt and enforce this ordinance at the earliest possible date:

AN ORDINANCE to protect the public health against disease and poisons carried by flies.

WHEREAS, It is commonly known that flies are very dangerous carriers of filth, filth poisons and disease germs, that they are born in filth and are a constant threat against the health, happiness and prosperity of the people; therefore,

SECTION 1. Be it ordained by the mayor and council of the city of ———, that it shall be unlawful for any person, firm or corporation to suffer or permit or have upon their premises, whether owned or leased by them, any one or more of the following unsanitary fly-producing, disease-causing conditions, to wit: (1) Animal manure in any quantity which is not securely protected from flies; (2) privies, vaults, cesspools, pits or like places, which are not securely protected from flies; (3) garbage in any quantity which is not securely protected from flies; (4) trash, liter, rags or anything whatsoever in which flies may breed or multiply.

SEC. 2. It shall be the duty of the chief of police or city marshal and health officers, upon learning in any way whatsoever of the existence of one or more of the unlawful conditions described in section 1 of this ordinance, to notify the offender in writing, upon order blanks provided by the city clerk, to remove or abate said unlawful conditions, stating the shortest reasonable time for such removal or abatement. In the event of the refusal

or neglect on the part of the notified offender to obey such order, the chief of police or health officer shall inform the street commissioner, upon a blank provided by the city clerk, and it shall then be the duty of said street commissioner, and he shall have power and authority, to remove and abate the reported unlawful conditions; and he shall keep an accurate account of the cost and expenses thereof, which shall be paid from the city treasury upon the sworn vouchers of the street commissioner, and said cost and expenses shall be a lien upon the property and shall be collected by law as taxes are collected and duly paid into the city treasury.

SEC. 3. Any person, firm or corporation found guilty of having created or suffered to exist on premises either owned or leased by them any one or more of the unlawful conditions named in section 1 of this ordinance shall be punished by a fine of not less than five nor more than fifty dollars.

SEC. 4. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed; and whereas an emergency exists, this ordinance shall be in effect upon and immediately after passage.

The Screened-in Porch.

I have my porch equipped with screens and not a chink remains
Through which you may get in to plague me with your hateful strains;
I rest my feet upon a chair, my ankles are exposed;
My Adam's apple o'er a shirt sans collar is disclosed;
At night I loll at ease and dream of triumphs which may come,
Screened in from care, my world is fair—now hum, confound you, hum!

Time was when I was forced to sit and wave the smoking punk,
And ever and anon give way to sad displays of spunk;
Around my ankles there were rings of poisoned ridges which
I rubbed and scratched and scratched and rubbed to stop the burning itch,
But now, with cocked-up feet I sit, to former sorrows dumb,
And through the screen gaze at the scene—oh, hum, confound you, hum!

My blessings on the man who first hit on this pleasant scheme;
Where might a poet hope to find a fairer, nobler theme?
The evening breezes fan my brow and gladness fills my breast;
I've done my best to-day, and now am taking well-earned rest;
Absolved from care, I tilt my chair and sit and idly drum
With fingers light which bear no bite, now hum, confound you, hum!
—S. E. Kiser, in *Chicago Record-Herald*.

State Board of Health Notes.

Swat
The fly.
The house fly.
The typhoid fly.
The cholera infantum fly.
The tuberculosis breeding fly.

Not how long, but how well you live.

No good housekeeper will tolerate flies.

God bless the man who first invented screens.

For the fourth season we remark, "Swat the fly."

A pair of "unheavenly twins": the fly and the mosquito.

Sewage disposal plants are becoming municipal sanitary necessities.

Did you ever see a train porter that knew anything about ventilation?

The common manure pile is the most prolific source of the fly nuisance.

Cleanliness is cheaper than flies, and screens are cheaper than doctor bills.

The typhoid fly loves to wipe his feet on baby's bottle or the family cake.

The garden hoe and rake are a certain specific for the "spring-fever" microbe.

It is as necessary to have fresh air in the home during cold weather as it is during the heated term.

Every city of the first class should have an efficient system of garbage collection and garbage disposal.

You have no right to complain of the loss of your morning nap if you permit flies to remain in your home.

The quality of drinking water found on Kansas trains seems to have improved since the ice is handled by tongs.

Patent medicines that claim to be especially indicated in the spring to "thin the blood" are monumental frauds.

The parents who wantonly expose their children to any of the so-called children's diseases are guilty of a great cruelty.

It is assumed that all physicians who are really interested in tuberculosis control will report their cases, as the law requires.

"To be clean is to maintain such a condition of premises and person as to be of no danger or offense to one's neighbors or one's self."

Why should not the animal slaughtered in local slaughterhouses be inspected, as well as those in the large packing establishments doing an interstate business?

The common practice of using the waste of a city to fill low places in or near the city is neither safe nor economic, and is in conflict with modern sanitary requirements.

The House Flies.

See the city with its flies;
Deadly flies!
What a world of sickness and of death
The word implies!
How they're swarming, swarming, swarm-
ing,
In the summer's balmy air;
Every residence they're storming,
On the edibles they're forming,
And they leave death's message there!
With their specks, specks, specks,
Typhoid germs, consumption flecks
And other dread diseases which most fre-
quently arise
From the flies, flies, flies, flies.
Flies, flies, flies--
From the filthy visitation of the flies!

—Pineapple Journal.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 5.

MAY, 1910.

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It pays to keep clean.

Is your home screened?

Beware of the typhoid fly.

Have you cleaned your back yard?

Dirty milk and dirty mothers are a large factor in infant mortality.

One of the most valuable assets of a store or shop is scrupulous cleanliness.

Morbidity and mortality reports are the foundation stones of sanitary science.

The physician who does not take an annual vacation is burning the candle at both ends.

Europeans declare that one of the many indications of American wastefulness is the enormous amount of valuable fertilizing material discharged into the natural waters in the shape of raw sewage.

VITAL STATISTICS

Reported to the Kansas Board of Health for April, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

											Months.	
											Cases.	Deaths.
											1910 1006	22 18
Allen	3	2	0	0	2	0	5	0	0	0	2	0
Anderson	0	0	0	0	0	0	0	0	0	0	1	1
Atchison	1	1	0	0	0	0	4	0	0	0	2	0
*Barber												
Barton	1	1	0	0	0	0	2	0	0	0	0	0
Bourbon	1	1	0	0	1	1	1	1	0	0	1	0
Brown	1	1	0	0	0	0	2	0	0	0	4	0
Butler	1	1	0	0	0	0	0	0	2	0	17	2
Chase	0	0	0	0	0	0	0	0	0	0	2	0
Chautauque	1	0	1	0	0	0	0	0	0	0	0	0
Cherokee	3	3	0	0	0	0	7	1	0	0	5	0
Cheyenne	0	0	2	0	0	0	0	0	0	0	2	0
Clark	0	0	0	0	0	0	0	0	0	0	2	0
Clay	0	0	0	0	0	0	1	0	0	0	2	0
Cloud	2	1	1	0	0	0	0	0	0	0	0	0
Coffey	0	0	0	0	0	0	9	1	0	0	30	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	2	2	1	0	1	0	1	0	1	0	4	0
Crawford	2	2	0	0	2	0	4	0	0	0	10	2
Decatur	0	0	0	0	0	0	0	0	1	0	1	0
Dickinson	1	1	0	0	0	0	0	0	0	0	1	1
Doniphan	1	1	0	0	0	0	2	2	10	0	11	0
Douglas	4	4	1	1	0	0	5	0	0	0	1	0
Edwards	0	0	0	0	1	0	4	0	1	0	12	0
Ellis	0	0	0	0	0	0	0	0	0	0	8	0
Ellis	0	0	0	0	4	0	0	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	0	0	1	0	50	0
Finney	0	0	0	0	0	0	0	0	2	0	0	0
Ford	2	0	0	0	0	0	0	0	0	0	8	1
Franklin	2	2	0	0	3	0	0	0	0	0	0	0
Geary	1	0	1	0	2	0	0	0	0	0	61	0
Gove	0	0	0	0	0	0	0	0	0	0	2	0
Graham	1	0	0	0	0	0	0	0	1	0	24	2
*Grant												
Gray	1	1	0	0	0	0	2	0	0	0	0	0
*Greeley												
Greenwood	3	2	0	0	3	0	4	0	3	0	7	0
Hamilton	0	0	0	0	0	0	0	0	0	0	4	0
*Harper												
Harvey	0	0	0	0	0	0	1	0	1	0	25	0
Haskell	0	0	0	0	0	0	0	0	0	0	1	0
Hodgeman	0	0	0	0	0	0	0	0	0	0	1	0
Jackson	3	1	0	0	0	0	1	0	0	0	7	0
Jefferson	0	0	0	0	0	0	1	0	0	0	10	0
Jewell	0	0	0	0	0	0	16	0	0	0	5	0
*Johnson												
Kearny	0	0	0	0	0	0	0	0	1	0	0	0
Kingman	0	0	0	0	0	0	0	0	2	0	1	1
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	0	0	0	0	9	0	0	0	23	0
Lane	0	0	0	0	0	0	0	0	0	0	0	0
Leavenworth	0	0	2	1	5	0	4	0	0	0	0	0
Lincoln	1	0	0	0	0	0	0	0	0	0	0	0
Linn	1	1	0	0	0	0	0	0	0	0	0	0
Logan	0	0	2	0	0	0	0	0	0	0	1	1
Lyon	0	0	0	0	8	2	0	0	0	0	30	0
Marion	0	0	0	0	0	0	0	0	0	0	0	0
Marshall	1	1	0	0	5	0	19	1	0	0	4	1
McPherson	0	0	1	1	0	0	1	0	0	0	19	0

CONTAGIOUS AND INFECTIOUS DISEASES - Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	0	0	0	0	0	0	0	0
Miami	0	0	0	0	0	0	0	0	1	0	0	0
Mitchell	1	1	0	0	0	0	1	0	0	0	9	0
Montgomery	0	0	0	0	0	0	10	0	27	1	183	0
* Morris												
* Morton												
Nemaha	1	1	0	0	0	0	1	1	0	0	11	0
Neosho	0	0	0	0	3	0	0	0	0	0	107	0
Ness	0	0	0	0	0	0	15	0	0	0	12	0
Norton	0	0	0	0	0	0	2	0	3	0	5	0
Osage	1	1	0	0	0	0	2	1	5	0	11	0
Osborne	0	0	1	0	1	0	6	0	1	0	4	0
Ottawa	0	0	1	1	0	0	2	0	0	0	0	0
Pawnee	0	0	0	0	0	0	0	0	3	0	0	0
Phillips	1	1	0	0	0	0	0	0	0	0	0	0
Pottawatomie	1	1	0	0	0	0	3	0	0	0	15	0
Pratt	0	0	0	0	1	0	4	0	0	0	16	0
Rawlins	5	0	0	0	0	0	0	0	0	0	2	0
Reno	0	0	0	0	2	0	12	1	15	0	30	0
Republic	0	0	2	2	0	0	22	0	0	0	2	0
Rice	0	0	0	0	0	0	0	0	0	0	6	0
Riley	0	0	0	0	1	0	0	0	1	0	16	0
Rocks	1	1	4	0	0	0	1	0	0	0	0	0
Rush	1	0	0	0	0	0	3	0	3	0	1	0
Russell	0	0	1	0	0	0	0	0	0	0	0	0
Saline	2	2	0	0	0	0	10	0	3	0	14	0
Scott	2	2	0	0	0	0	0	0	4	0	1	0
Sedgwick	0	0	0	0	0	0	2	0	3	0	45	0
Seward	0	0	0	0	0	0	5	0	0	0	60	0
Shawnee	0	0	0	0	2	1	1	0	0	0	63	0
Sheridan	0	0	0	0	4	0	15	0	1	0	15	0
Sherman	0	0	0	0	0	0	0	0	0	0	29	0
Smith	1	1	0	0	0	0	0	0	0	0	0	0
Stafford	0	0	0	0	0	0	15	0	0	0	2	1
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	4	4	1	0	5	0	2	0	0	0	39	0
Thomas	0	0	4	0	2	0	2	0	1	0	2	0
Trego	0	0	0	0	0	0	0	0	0	0	7	0
Wabaunsee	1	0	0	0	0	0	0	0	0	0	20	0
Wallace	0	0	0	0	0	0	0	0	0	0	4	0
Washington	0	0	0	0	0	0	0	0	0	0	11	0
* Wichita												
Wilson	0	0	4	2	0	0	0	0	0	0	1	0
Woodson	0	0	0	0	0	0	0	0	0	0	4	0
Wyandotte	0	0	0	0	3	0	3	0	4	0	18	0
Cities:												
Fort Scott	2	2	0	0	1	0	1	0	0	0	47	1
Atchison	1	1	0	0	0	0	0	0	5	0	0	0
Coffeyville	2	0	0	0	0	0	2	0	7	0	8	2
Kansas City	11	11	17	4	14	1	35	2	20	0	110	0
Leavenworth	2	1	8	0	2	0	3	0	1	0	38	0
Parsons	2	2	0	0	0	0	2	0	8	0	76	0
Pittsburg	2	1	0	0	3	0	22	2	0	0	13	1
Topeka	4	4	1	1	13	2	4	0	0	0	172	0
Wichita	9	0	0	0	1	0	11	0	6	0	103	0
State Institutions,	182	3	0	0	0	0	0	0	0	0	10	0

* No reports.

The annual meeting of the Association of Health Officers will be on June 15, at Representative Hall.

The sanitary condition of the fish and oyster wharf at Washing- ton, D. C., is a national disgrace.

FOOD ANALYSES No. XXVIII.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and
Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

BAKING POWDERS.

This is the first examination of these products since the State Board of Health set a standard for them. The standard reads: "Baking powder yields not less than 10 per cent available carbon dioxide." That this standard is not in the least too high is shown by the fact that, of the commercial samples on the Kansas market at the time the above standard was adopted, only eight out of the forty-four so far collected were below standard. Of the remainder none contained less than 11 per cent available carbon dioxide and thirty reached 12 per cent or higher.

Those that were below standard were either known to be old samples or had the appearance of age, and when freshly packed by the manufacturer may have been satisfactory. Some of these were caked in the can, showing that the chemical reaction which should take place in the cake or other food had gone on in the can, and that the carbon dioxide, which is a gas and raises the cake by its expansion, had escaped. Housewives are given notice that when a can is opened and found caked or very lumpy, they had better return it to the store, as it will usually be a weak powder. Retailers are warned that they should not buy such large stocks of baking powder that it will remain on the shelves two or three years. This should be true of all food products, in fact, but age is especially apparent in the deterioration of leavening agents. All stocks of food should be bought in such quantity as to be rapidly turned over. Loss would be less, dirty packages would disappear, the whole store would look better and be better.

A few of the powders reported at this time did not have the formula on the label, and are illegal for this reason. Some of these were also below standard, both facts indicating their age. If any retailer has baking powders not labeled with the ingredients, and will write to the manufacturer, he will receive proper labels to put on the cans, and should do so in order not to have his goods declared illegal.

Baking powders are of four classes in general, and the public have a right to know which kind is being sold to them. These four classes are (1) cream of tartar powders, (2) phosphate powders, (3) alum powders, (4) mixture of phosphate and alum powders.

Sometimes tartaric acid, albumen, carbonate of magnesia or other substances are used in addition, but the essential ingredient is bicarbonate of sodium (known as saleratus at home), an acid principle which, in presence of water, by chemical action on the saleratus, liberates the leavening gas. These acid substances in general are cream of tartar, acid calcium phosphate or burnt alum. In addition, dry starch is added to help keep the two active ingredients from liberating gas in the can.

The cost of these different powders varies greatly. Taking the lowest current market prices for baking powder chemicals when bought in very large quantities and figuring on baking powders that yield 13 per cent carbon dioxide gas when new, the raw materials alone cost for each pound of cream of tartar powders fourteen cents, for phosphate powders just over four cents, and for alum powders two and a third cents. These prices reveal the reason for the great preference of manufacturers for the last two types of powders. It must of course be carefully borne in mind that the cost of mixing, cans, labels, boxing, shipping, advertising and retailers' profit bring these costs up to the usual retail prices.

Some powders declare on the label that foods prepared from them contain no alum or lime or ammonia or rochelle salts or tartaric acid. Of course not; such statements are intended to deceive or mislead the public. Probably no baking powders are on the market which leave these residues, with the exception of rochelle salts, which is left by cream of tartar powders. All baking powders leave residues which are recognized as drugs, and it is merely for the people to know what kinds of powders there are for sale and their relative price, and then choose among them according to their composition, their action in actual use and their price.

Some powders containing alum or phosphate endeavor to hide this fact by the use of various chemical names, but acid calcium phosphate, calcium phosphate and phosphate all stand for the same thing, and alum, sodium alum, basic aluminium sulphate, sodium aluminic sulphate, sulphate of aluminum, all mean the same thing — namely, burnt alum. In reality alum, as the housewife knows it in lump form, is never used in baking powders, but another chemical which is known as burnt alum.

Some labels try to give the impression that the products are cream of tartar powders by having a picture of grapes on the label. Such powders are illegal because they deceive the public; and, if the formula is read, it will be found that alum or phosphate is mentioned in it.

It will be noticed that many baking powders contain a large amount of starch. These are the alum and phosphate products, which require more starch or filler than the cream of tartar powders, else they would be too strong.

BAKING POWDER.

Insp. No.	Per cent available carbon dioxide.	Per cent starch.	Formula.
7616	16.37	28.12	Sodium aluminium sulphate.
9108	14.06	32.16	Not stated.
9148	7.78	35.29	Phosphates, bicarbonate of soda, carbonate of magnesia, cornstarch, egg albumen.
9149	12.03	18.19	Cream of tartar, bicarbonate of soda, cornstarch.
9150	14.79	38.11	Bicarbonate of soda, alum, cornstarch, white of egg.
9184	11.31	43.27	Not stated.
9187	8.99	46.31	White of egg, soda bicarbonate, acid phosphate, soda alum, cornstarch.
9194	11.01	14.38	Cream of tartar, bicarbonate of soda, starch.
9195	9.59	43.45	Cream of tartar, soda alum, starch.
9214	17.66	31.13	Bicarbonate of soda, alum, starch.
9216	12.73	40.53	Bicarbonate of soda, acid phosphate, alum, starch.
9217	12.85	41.17	Bicarbonate of soda, acid phosphate, alum, cornstarch.
9218	11.03	42.08	Bicarbonate of soda, calcium phosphate, alum, egg albumen, cornstarch.
9219	13.28	38.92	Cornstarch, bicarbonate of soda, acid phosphate of calcium, alum, magnesium carbonate.
9222	13.78	29.80	Bicarbonate of soda, phosphate, alum, starch.
9223	15.19	39.13	Soda, acid phosphate, cornstarch, alum, white of egg.
9224	16.64	31.35	Bicarbonate of soda, alum, starch.
9225	12.28	29.20	Cream of tartar, tartaric acid, bicarbonate of soda, cornstarch.
9226	12.83	27.31	Cream of tartar, tartaric acid, bicarbonate of soda, starch.
9239	3.36	47.27	Not stated.
9241	14.25	44.69	Starch, acid phosphate, sodic aluminic sulphate, bicarbonate of soda, carbonate of magnesia, egg albumen.
9242	11.22	37.61	White of egg, sodium bicarbonate, calcium acid phosphate, sodium aluminium sulphate, cornstarch.
9245	12.61	43.98	Cornstarch, sodium bicarbonate, sodium aluminium sulphate.
9248	14.45	35.54	Bicarbonate of soda, cornstarch, soda alum, acid phosphate, egg.
9252	16.94	23.93	Soda alum, bicarbonate of soda, cornstarch.
9254	12.79	31.93	Acid phosphate of calcium, basic aluminium phosphate, bicarbonate of soda, cornstarch.
9255	13.16	47.96	Phosphate, bicarbonate of soda, starch.
9256	11.96	39.43	Phosphate (given calcium), bicarbonate of soda, starch.
9257	16.93	44.15	Soda alum, bicarbonate of soda, cornstarch.
9258	12.00	18.46	Cream of tartar, bicarbonate of soda, cornstarch.
9259	14.52	26.72	Acid phosphate of calcium, bicarbonate of soda, carbonate magnesia, egg albumen, cornstarch.
9260	11.88	48.64	Soda alum, bicarbonate of soda, starch.
9261	16.93	30.26	Soda bicarbonate, soda alum, cornstarch.
2699	18.31	45.85	Not stated.
9217A	14.08	42.02	Bicarbonate of soda, acid phosphate, alum, cornstarch.
9217B	14.24	31.16	Phosphate, bicarbonate of soda, alum, starch.
9217C	13.01	.....	Cream of tartar, tartaric acid, bicarbonate of soda, cornstarch.
9217D	17.65	31.14	Bicarbonate of soda, soda alum, cornstarch.
9217E	5.69	44.09	Cream of tartar, phosphate, tartaric acid, bicarbonate of soda, cornstarch, carbonate of magnesium.
9217F	7.93	44.49	Not stated.
9217G	12.20	41.73	Bicarbonate of soda, calcium acid phosphate, alum, cornstarch.
9217H	11.08	48.84	Alum, soda, starch.
9217I	8.24	40.77	Not stated.
9217J	8.62	51.32	Acid phosphate of calcium, sulphate of aluminium and sodium, bicarbonate of soda, cornstarch.

LIST OF ILLEGAL BAKING POWDERS.

No. 9184. Label, "Shephard Economical Baking Powder, Absolutely Pure." Manufacturer, Shephard Baking Powder Company, St. Louis, Mo. Retailer, W. Webber, jr., Woodbine. Ingredients not stated. Illegal.

No. 9195. Label, "Manhattan Baking Powder." Manufacturer, C. A. Murdock Manufacturing Company, Kansas City, Mo. Retailer, E. B. Purcell Company, Manhattan. Low in carbon dioxide. Illegal.

No. 9216. Label, "Eaton & Young's Pure Baking Powder." Manufacturer, Wabash Baking Powder Company, Wabash, Ind. Retailer, Eaton & Young, Hillsdale. Picture of grapes on label. Illegal.

No. 2699. Label, "Household Baking Powder." Manufacturer, Household Supply Company, St. Louis, Mo. Retailer, W. H. Johnson, Grantville. Formula not given. Illegal.

No. 9217E. Label, "Hollis Tartar of Cream Absolutely Pure Baking Powder." Manufacturer, Hollis Manufacturing Company, Kansas City, Mo. Low in carbon dioxide. Illegal.

No. 9217F. Label, "Atlantic Tea Company Baking Powder." Manufacturer, not given. Low in carbon dioxide, and formula not given. Illegal.

No. 9217I. Label, "Pickwick Baking Powder." Manufacturer, Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, Sam McCurdy, Lawrence. Low in carbon dioxide, and formula not given. Illegal. It should be stated in connection with this sample and 9217J that the retailer refused to sell these samples, saying that they were not for sale and were to be sent back to the manufacturer; however, they were at first for sale, until it was known that they were to be tested.

No. 9217J. Label, "Jack Frost Baking Powder." Manufacturer, Bain & Chapman Manufacturing Company, St. Louis, Mo. Retailer, Sam McCurdy, Lawrence. Low in carbon dioxide, and the formula is hard to find, being in fine print along with the directions for use. Illegal.

MILK.

No.	Butter fat.	Total solids.	Refractive index of serum at 20° C.	Remarks.
5323A.....	2.30%	9.12%	35.90	Skimmed and watered. Illegal.
5323B.....	3.15	11.22	39.00	Watered. Illegal.
5323C.....	2.20	11.20	42.00	Skimmed. Illegal.
5323D.....	3.50	11.58	39.20	Watered. Illegal.
5323E.....	3.90	13.17	43.15	Normal. Passed.
5323F.....	2.65	10.72	39.12	Skimmed and watered. Illegal.
5323G.....	4.45	12.91	40.65	Normal. Passed.
5323H.....	3.15	10.34	36.35	Watered. Illegal.
5323I.....	3.00	10.84	37.12	Watered. Illegal.
5323J.....	3.10	10.23	36.50	Watered. Illegal.
5323K.....	4.15	13.02	41.25	Normal. Passed.

ADDITIONAL DATA TO MILKS LISTED ABOVE.

No. 5323A. Wholesaler, Intercity Dairy Company, Kansas City, Kan. Retailer, M. Rosenblum, Kansas City. Purchased May 3, 1910.

No. 5323B. Wholesaler, North End Dairy Company, Kansas City, Kan. Retailer, H. Stempleman, Kansas City. Purchased May 3, 1910.

No. 5323C. Wholesaler, St. Louis Dairy Company, Kansas City, Kan. Retailer, P. J. Broll, Kansas City. Purchased, May 3, 1910.

No. 5323D. Wholesaler, North End Dairy Company, Kansas City, Kan. Retailer, Philip Spector, Kansas City. Purchased May 3, 1910.

No. 5323E. Producer, Robert Curran, Welburne, Kan. Retailer, Robert Curran, Welburne. Purchased May 4, 1910.

No. 5323F. Producer, Frank Caduff, Kansas City, Kan. Retailer, W. H. MacHale & Co., Kansas City. Purchased May 3, 1910.

No. 5323G. Producer, John Gunther, Kansas City, Kan. Retailer, John Gunther, Kansas City. Purchased May 4, 1910.

No. 5323H. Producer, H. L. Armentaut, Kansas City, Kan. Retailer, H. L. Armentaut, Kansas City. Purchased May 4, 1910.

No. 5323I. Producer, W. Waldner, Kansas City, Kan. Retailer, W. Waldner, Kansas City. Purchased May 4, 1910.

No. 5323J. Producer, H. L. Kerr, Kansas City, Kan. Retailer, B. Markovitz, Kansas City. Purchased May 3, 1910.

No. 5323K. Wholesaler, Leavenworth Creamery Company. Retailer, F. Sacha, Kansas City, Kan. Purchased May 3, 1910.

LEMON EXTRACT.

No. 2593. Oil of lemon, 6 per cent. Passed.

No. 2657. Label, "Extract of Lemon." Manufacturer, McPike Drug Company, Kansas City, Mo. Retailer, J. W. Fleming & Son, Enterprise. Oil of lemon, 1.1 per cent. Inspector's remarks: "Taken from shelf bottle." Illegal.

No. 2672. Oil of lemon, 11.9 per cent. Passed.

No. 2673. Oil of lemon, 6.1 per cent. Passed.

PICKLES.

No. 7662. Label, "Prairie King Brand Spiced Pickles, Contain Alum." Manufacturer, Wichita Vinegar Works Company, Wichita. Retailer, Davies Grocery Company, Wichita. Alum present. Illegal.

No. 7675. Label, "Prairie King Brand Spiced Pickles. Man-

ufacturer, Wichita Vinegar Works Company, Wichita. Retailer, Davies Grocery Company, Wichita. Alum present, and not stated. Illegal.

No. 7676. Label on barrel, "Packed Aug. '09, Preserved with 0.1 of 1 per cent of benzoate of soda, and contains small amount of alum." Retailer, R. H. Tighe, Wichita. Retailer did not know who was the manufacturer. As neither alum nor benzoic acid were present, new pickles must have been placed in the old container and thereby became misbranded (see label on barrel).

No. 7677. Bulk Sweet Pickles. Manufacturer or Jobber, Wichita Wholesale Grocery Company, Wichita. Retailer, J. D. Licklider, Wichita. Alum present, not stated. Illegal.

No. 7678. Bulk Pickles. Manufacturer's name not ascertained. Retailer, J. A. Berry, Wichita. Inspector's remarks: "No marks on barrel at all; not in original package." Alum and benzoic acid present. Illegal.

No. 7679. Bulk Pickles. Passed.

No. 9183. Passed.

9188. Label, "Old Homestead Brand Guaranteed Sweet Pickles. Prepared with 0.1 of 1 per cent benzoate of soda." Manufacturer, F. J. Horn Preserving Company, Kansas City, Mo. Retailer, J. F. Rezoc & Co., St. Marys. Alum present, not stated. Illegal.

No. 9254. These pickles were labeled, "Prepared with Alum and 0.1 of 1 per cent Benzoate of Soda," but on examination no alum was found.

HONEY.

No. 3827. Analysis shows this to be pure honey. Passed.

No. 6433. Analysis shows this to be pure honey. Passed.

No. 6434. Analysis shows this to be pure honey. Passed.

No. 7638. Analysis shows this to be pure honey. Passed.

No. 9155. Analysis shows this to be pure honey. Passed.

CANDY.

No. 3734. Examined for mineral adulterants. Passed.

No. 3735. Examined for mineral adulterants. Passed.

No. 3736. Examined for mineral adulterants. Passed.

SYRUP.

No. 7327. Maple Syrup. Analysis shows that it is pure maple syrup. Passed.

No. 7589. Label, "Compound Louisiana Molasses and Glucose." Analysis shows it to be as stated on the label. Passed.

MISCELLANEOUS.

No. 9232. Celery Relish. Examined for preservatives and saccharin. None found. Passed.

No. 9265. Celery Relish. Examined for preservatives and saccharin. None found. Passed.

No. 9231. Onions. Examined for preservatives and saccharin. None found. Passed.

No. 7594. Rice. Label, "Three Pounds Monogram Table Rice, Scientifically Grown and Prepared Especially For Food. Absolutely Pure, Sweet and Wholesome." Packer, Watson-Durand-Kasper Grocery Company, Salina. Retailer, W. P. Shaak, Sterling. This package of rice contained 196 dead grain weevils, and 27 live ones; and was *coated*, which fact is not stated on the label. Package is $5\frac{1}{2}$ per cent short weight. Illegal.

No. 9199. Chili. Examined for preservatives. None found. Passed.

No. 9209. Tomato Catsup. Jobber, Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, Alex Kelley, Olathe. Benzoic acid present, and not stated on label. Illegal.

FOOD ANALYSES No. XXIX.

By Prof. J. T. WILLARD, Analyst for the Board, and C. A. A. UTT, Assistant.

MANHATTAN, KAN., May 20, 1910.

I present herewith results upon most of the inspection samples of food submitted since the last report.

BEANS AND PICKLES.

Insp. No. 9189, serial No. 3385. Sour Gherkins, "Bismarck" brand. Manufactured by Reid, Murdoch & Co., Chicago. Sold by The E. B. Purcell Trading Company, Manhattan. These were of small, uniform size and gave no reaction for copper or aluminum. Passed.

Insp. No. 9190, serial No. 3386. Sweet Gherkins, "Bismarck" brand, manufactured by Reid, Murdoch & Co., Chicago. Sold by The E. B. Purcell Trading Company, Manhattan. These were of small, uniform size. Neither alum, copper salts or saccharin were detected. Passed.

Insp. No. 9191, serial No. 3392. Chowchow. Manufactured by Crosse & Blackwell, London, England. Jobber, Reid, Murdoch & Co., Chicago. Sold by The E. B. Purcell Trading Company, Manhattan. This was a mixture of cucumber pickles, onions,

cauliflower, etc., with a dressing of mustard and turmeric. No salicylates or benzoates were detected.

Insp. No. 9192, serial No. 3393. Baked Beans with Tomato Sauce, "Monarch" brand. Manufactured by Reid, Murdoch & Co., Chicago. Sold by The E. B. Purcell Trading Company, Manhattan. No reactions were obtained for benzoates of salicylates. Passed.

Insp. No. 9193, serial No. 3394. Baked Beans with Tomato Dressing. Brand, "Polk's Best." Manufactured by the J. T. Polk Company, Greenwood, Ind. Sold by The E. B. Purcell Trading Company, Manhattan. No reactions were obtained for benzoates or salicylates. Passed.

BUTTER.

Several lots of butter of five prints each have been weighed and tested with reference to net weight of the prints and composition of the butter. They were as follows:

Insp. No. 9136, serial No. 3399. "Primrose" brand. Manufactured by the Continental Creamery Company, Topeka. The wrapper consisted of an outside paper, carton, and two parchment papers.

Insp. No. 9137, serial No. 3400. Represented to be "Primrose" butter made by the Continental Creamery, Topeka, but the samples were wrapped in parchment paper only and hence did not bear the name of the manufacturer.

Insp. No. 7680, serial No. 3466. "Peerless" brand. Manufactured by the Wichita Creamery and Ice Cream Company, Wichita. Prints wrapped in very wet parchment paper and enclosed in paraffined carton.

Insp. No. 7681, serial No. 3467. "Pride of the West" brand. Manufactured by the Southwest Creamery Company, Wichita. Container consists of parchment paper, paraffined carton and outside paper.

Insp. No. 6435, serial No. 3473. "Pittsburg" brand. Manufactured by the Crawford County Creamery Company, Pittsburg. Container consists of parchment paper and paraffined carton. These samples had a poor appearance and rancid odor, but gave no evidence of adulteration.

In the table below an exhibit is made of the gross weight and net weight of each print, and the composition of each of the above samples. All of the lots are passed in respect to composition, and "Pride of the West" is also passed in respect to weight. All of the others are illegal in respect to weight.

Serial No. 3399:	Print 1.	Print 2.	Print 3.	Print 4.	Print 5.
Gross weight, ounces.....	16 $\frac{1}{4}$	16 $\frac{1}{4}$	17 $\frac{3}{8}$	17	16 $\frac{1}{4}$
Net weight, ounces.....	15 $\frac{3}{8}$	15 $\frac{3}{8}$	15 $\frac{1}{2}$	15 $\frac{3}{8}$	15 $\frac{3}{8}$
Composition: Water, 14.45% ; fat, 80.34% ; casein, 1.30% ; ash, 3.48%.					
Serial No. 3400:	Print 1.	Print 2.	Print 3.	Print 4.	Print 5.
Gross weight, ounces.....	15 $\frac{1}{8}$	15	15 $\frac{1}{8}$	15 $\frac{3}{8}$	15 $\frac{3}{8}$
Net weight, ounces.....	14 $\frac{1}{4}$	14 $\frac{1}{4}$	14 $\frac{1}{4}$	15 $\frac{1}{8}$	15 $\frac{3}{8}$
Composition: Water, 13.60% ; fat, 81.95% ; casein, 1.31% ; ash, 3.11%.					
Serial No. 3466:	Print 1.	Print 2.	Print 3.	Print 4.	Print 5.
Gross weight, grams....	467.0	457.5	463.7	461.4	461.4
Net weight, grams.....	439.7	430.2	436.4	434.1	434.1
Net weight, ounces.....	15.50	15.28	15.40	15.32	15.32
Composition: Water, 14.14% ; fat, 83.04% ; casein, 1.10% ; ash, 2.70%.					
Serial No. 3467:	Print 1.	Print 2.	Print 3.	Print 4.	Print 5.
Gross weight, grams....	478.9	481.1	481.3	470.3	479.7
Net weight, grams.....	453.1	455.3	455.5	444.5	453.9
Net weight, ounces.....	15.99	16.06	16.07	15.71	15.02
Composition: Water, 12.99% ; fat, 84.11% ; casein, 0.71% ; ash, 2.20%.					
Serial No. 3473:	Print 1.	Print 2.	Print 3.	Print 4.	Print 5.
Gross weight, grams....	455.0	453.0	467.0	456.0	444.0
Net weight, grams.....	428.6	426.6	440.6	429.6	417.6
Net weight, ounces.....	15.12	15.05	15.55	15.16	14.74
Composition: Water, 11.93% ; fat, 85.95% ; casein, 0.97% ; ash, 1.21%.					

ICE CREAM.

Insp. No.	Serial No.	Dealer.	Place.	Per cent fat.	Passed.
9200	3469	Peter Heinz	Topeka	14.50	Passed.
9204	3470	Peter Heinz .....	.....	17.10	..
9273	3626	J. L. Johns	Junction City	15.60	..
9274	3627	A. M. & M. J. Flower.....	.....	12.40	Illegal.
9275	3628	J. M. Shellbaas .....	..	12.00	..
9276	3629	Insley & Halfhide .....	..	15.90	Passed.
2724	3635	W. H. Chappell.....	Norton	13.50	Illegal.
6457	3640	Leo Weise	Kansas City.....	10.80	..
6458	3641	Leo Weise .....	..	11.60	..
6459	3642	Leo Weise .....	.....	8.60	..

DRUG ANALYSES No. XXIX.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

The present report of the drug laboratory consists of some official preparations and miscellaneous articles received from different parts of the state, as sent in by inspectors.

As an introduction to this report, we desire to present another series of assays of pepsin pharmaceuticals, as collected on the market, merely to show how variable these preparations are and to emphasize the importance of great care in dispensing this class of agents. It is impossible to tell, from the appearance or taste and other physical properties, whether a pepsin preparation is of any value as a digestant. It will be seen from the preparations tabulated below that a large majority of them are practically valueless as

medicinal agents. It is wise for the pharmacists to take every possible precaution to guard against deterioration of preparations containing ferments. We would reiterate what we have said before, that physicians would do well to prescribe only extemporaneously made pepsin elixirs, such as pharmacists can make from a standard pepsin, dissolving this in an appropriate, compatible vehicle, adding to the solution glycerine, which helps to prevent rapid deterioration.

In order to ascertain the quality of pepsin preparations dispensed in a neighboring city (Topeka), forty-seven different samples from different dispensers were secured by this laboratory (not by regular inspectors). Only five of these forty-seven were found to be of standard strength. We have regarded as "standard strength" those only that will digest a quantity of albumin equal to that of elixir of pepsin, N. F. This preparation, if freshly made of standard material, responds to the official test for pepsin. In applying the test, an amount of the liquid corresponding to 0.003 gm. of pepsin is taken, and the directions for the U. S. P. pepsin test is followed. This N. F. elixir will leave undigested after the official test is completed not more than 1 cc. of coagulated albumin. As above stated, five of the forty-seven samples responded to this test. The remaining forty-two left undigested residues as follows: 36, 35, 39, 37, 39, 37, 40, 9, 39, 8, 3, 10, 39, 42, 34, 45, 35, 40, 11, 40, 44, 35, 41, 2, 39, 41, 2, 41, 3, 2, 14, 45, 45, 44, 15, 24, 40, 42, 38, 37, 36 cc., respectively.

As to the physical properties of these various products, they varied in color from pale yellow through a dark greenish to a deep red. The acidity was quite as variable as the color. This examination shows that the pharmacists are not dispensing as uniform preparations of pepsin as the food and drugs law hopes to bring about. It should be stated that many of these N. F. preparations have still the proprietary characteristics—that is, they have not entirely merged into the N. F. standard preparations—claiming the superiority(?) of "our own brand," etc. The Board of Health has been exceedingly lenient in its criticisms of such articles, believing that absolute uniformity is practically impossible at the present time, but it seems clear that a medicinal agent is not worthy of consideration by the medical profession until it is at least free from the one objection, *inactivity*.

Attention should be called to a class of substandard preparations which Inspector Tilford says is gaining a foothold. I refer to simulations of official preparations, which are very commonly used in

the household, such as spirits of camphor. Inspector Tilford finds such substandard solutions labeled, for example, as follows:

"A mixture—Camphor, Alcohol, and Water."

"A mixture—Spirits, Camphor, and Water."

Such a label may be regarded as an ingenious method of subverting the law. On the other hand, it may be regarded as an attempt to accommodate the demand for cheap articles. In this case, it is a cheaper spirits of camphor. It is probably contended by the retailer that, using a label of this kind, he is not deceiving the customer, but the customer, as a rule, has no detailed knowledge of spirits of camphor. If he knew the exact relation between the standard spirits of camphor and the one as above labeled, it is doubtful if he would, in many cases, buy this substitute at any price. We cannot regard such preparations other than as imitations. Whether such an imitation shall be recognized when so labeled as legal, is a fundamental question. If the food and drugs administration permits such ingenious methods of accommodating the clamor for cheaper goods, it opens the door for a multitude of substandard materials sold for meeting competition.

We believe that one primary cause for cheapening goods is the demand of the consumer himself, who refuses to pay the price of the pure article, ignorant of the fact that the purer article is cheaper at the higher price. Dealers are apt to surrender to the temptation to supply these substandard goods at the price insisted upon and surrender to an ambition to undersell competitors, using this means of so doing. It goes without saying that the practice is ruinous to legitimate business; it introduces an element which is not only a great drawback to the profession of pharmacy indirectly, but more directly a menace to public health. The food and drugs law has had, thus far, the salutary influence in bringing up to standard the official preparations, but this form of pernicious practice we fear, if permitted, will finally make inoperative the law itself.

The following official preparations and miscellaneous articles were examined:

Lab. No. 2859, Insp. No. 1841. "H. H. H. Medicine." C. E. Potts Drug Company, Wichita. Contains ammonia and volatile oils. Declared to contain 65 per cent of alcohol.

Lab. No. 3064, Insp. No. 2044. "Patten's Lightning Salve." J. H. Patten, Springfield, Mo. Ash, 2.99 per cent. Contains resin and a camphoraceous substance. Contains no alkaloids or mineral salts.

ASSAY OF PEPSIN PHARMACEUTICALS.

Insp. No.	Lab. No.	Name of sample.	Acidity.	Color and properties.	Amount of undigested albumin.*
4078	2548	Elixir Pepsin, N. F.	Low	Pale yellow, clear....	Less than 1 cc.
4179	2590	Glycero Papo Pepsin.....	Low	Slightly cloudy, pale yellow.....	1 cc.
4127	8499	Elixir Calisaya Pepsin and Bismuth	Low	Dirty brown, cloudy..	33 cc.
4074	2544	Wine of Pepsin	Low	Reddish brown, clear.	32 cc.
4044	2514	Elixir Pancreo, Pepsin and Bismuth.....	None ...	Reddish brown, clear.	34 cc.
3132	8505	Elixir Comp. Pepsin, Powd.....	Low	Reddish brown, clear.	33.5 cc.
4043	2513	Elixir Lactated Pepsin.....	Low	Red, clear.....	8 cc.
4088	2508	Essence of Pepsin	Low	Yellowish brown, cloudy	1.5 cc.
4146	8518	Essence of Pepsin	Low	Pale yellow, clear....	2 cc.
4104	2574	Essence of Pepsin	Low	Pale yellow, clear....	Less than 1 cc.
4090	2560	Elixir Lactated Pepsin.....	Low	Red, clear.....	32.5 cc.
4135	8507	Elixir Pepsin, Bismuth and Calisaya.....	Low	Dark reddish, clear brown.....	40.5 cc.
4037	2507	Elixir Lactated Pepsin	Low	Red, cloudy.....	31.5 cc.
4120	8492	Elixir Pepsin and Bismuth	None ..	Red, clear.....	40 cc.
4045	2515	Elixir Pepsin and Bismuth	Low	Pale yellow, cloudy, large amount sediment.....	35 cc.
4237	2626	Elixir Pepsin and Bismuth	Low	Pale yellow, clear....	41 cc.
4134	8506	Lime Juice and Pepsin.....	High....	Reddish brown, clear..	39 cc.
4091	2561	Fluid Pepsin.....	None ...	Yellow, clear.....	2 cc.

*The process employed in the analysis is so adjusted that at the end of the official 2½ hours' digestion there should be left (if the preparation is of standard pepsin strength) not more than 1 cc. of undigested albumin. See Kansas Board of Health BULLETIN, January 1910, p. 17.

Lab. No. 3267, Insp. No. 2153. "Syrup of Wild Cherry." C. S. Wall, Quinter. Found to contain 14.4 per cent of sugar, 25.5 per cent of alcohol; glycerine was present. Sample has a specific gravity at 15.5° C. of 1.0321. A sample prepared in this laboratory according to the official formula was found to contain 49.84 per cent of sugar and to have a specific gravity of 1.3088. Alcohol should not be present. Adulterated.

Lab. No. 3536, Insp. No. 2241. "Granules Mercury Biniodide." Upjohn Company, Kalamazoo, Mich. Passed.

Lab. No. 3804, Insp. No. 2414. "Tr. of Opium Deodorized." Smith Drug Company, Stockton, retailer. Searle & Hereth, Chicago, manufacturer. Found to contain 1.05 per cent of morphine.

Lab. No. 3805, Insp. No. 2415. "Deodorized Tr. of Opium." Smith Drug Company, Stockton. Found to contain 0.97 per cent morphine. Below standard.

Lab. No. 3836, Insp. No. 8378. "Deodorized Tr. of Opium." Dr. D. S. Sparks, Greensburg. Found to contain 0.47 per cent morphine. Below standard.

Lab. No. 3874, Insp. No. 8416. "Tr. of Opium." Geo. T. Brown,

Independence. Found to contain 0.891 per cent morphine. Below standard.

Lab. No. 3875, Insp. No. 8417. "Tr. of Opium." Frank E. Yoe, Independence. Found to contain 1.08 per cent morphine.

Lab. No. 3976, Insp. No. 8422. "Tr. of Opium." R. T. Arbuthnot, Cherryvale. Found to contain 1.21 per cent morphine. Passed.

Lab. No. 3977, Insp. No. 8423. "Deodorized Tr. of Opium." W. H. Kinney, Cherryvale. Found to contain 1.14 per cent morphine.

Lab. No. 4017, Insp. No. 8469. "Tr. of Opium." Bunker & Fretz, Arkansas City. Found to contain 0.87 per cent morphine. Below standard.

Lab. No. 4029, Insp. No. 8481. "Tr. of Opium." W. A. Farringer, Winfield. Found to contain 1.27 per cent morphine. Passed.

Lab. No. 4031, Insp. No. 8483. "Tr. of Opium." A. K. Snyder, Winfield. Found to contain 1.20 per cent morphine. Passed.

Lab. No. 4032, Insp. No. 8484. "Tr. of Opium." Brown's Drug Store, Winfield. Found to contain 0.75 per cent morphine. Below standard.

Lab. No. 4033, Insp. No. 8485. "Tr. of Opium." Grant & Marshall, Augusta. Found to contain 1.18 per cent morphine. Passed.

Lab. No. 4098, Insp. No. 2568. "Tr. of Opium." Fred L. Johnson, Wichita. Said to have been prepared from Lilly's Fluid Extract. Found to contain 1.05 per cent morphine.

Lab. No. 4121, Insp. No. 8493. "Tr. of Opium Deodorized." Lease & Gibbon, Wichita. Found to contain 1.10 per cent morphine.

Lab. No. 4129, Insp. No. 8501. "Tr. of Opium Deodorized." Higginson Drug Company, Wichita. Found to contain 1.15 per cent morphine.

Lab. No. 4155, Insp. No. 8526. "Hindipo." Manufactured by the Hindipo Company, New York. Pills weighing 5.76 grs. Found to be composed largely of asafoetida.

Lab. No. 4178, Insp. No. 2589. "Fl. Ext. of Coca." W. O. Goodin, Wichita. Found to contain 0.062 per cent cocaine. Should contain 0.5 per cent cocaine. Below standard.

Lab. No. 4255, Insp. No. 2642. "Spt. of Peppermint." C. L. Becker, Ottawa. Found to contain 10.1 cc. of oil to 100 cc. of essence. Passed.

Lab. No. 4272, Insp. No. 2659. "Bashham's Mixture." Manufactured by Faxon & Gallagher. J. W. Fleming & Son, Enterprise. Iron in preparation was found to be largely precipitated.

Lab. No. 4280, Insp. No. 2667. "Spt. of Camphor." Willard & Co., Manhattan. Found to contain 15.89 per cent camphor. Above standard.

Lab. No. 4282, Insp. No. 2669. "Ess. of Peppermint." Willard & Co., Manhattan. Found to contain 8.25 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4283, Insp. No. 2670. "Spt. of Camphor." The Eagle Drug Store, Riley. Found to contain 9.65 per cent camphor. Passed.

Lab. No. 4284, Insp. No. 2671. "Chamberlain's Ess. of Peppermint." Manufactured by the Chamberlain Medicine Company, Des Moines, Iowa. Retailer, James Bereridge, Keats. Found to contain 3.18 cc. of oil in 100 cc. of essence and 25.89 per cent added water. The preparation was declared by the manufacturer to contain 62 per cent alcohol. Adulterated.

Lab. No. 4288, Insp. No. 9227. "Dr. Koch's Ess. of Peppermint." Manufactured by Dr. Koch Vegetable Tea Company, Winona, Minn. Retailer, Joseph Barnett, Pressonville. W. W. Graham, of Paola, runs a wagon through the country for the sale of Koch's preparations. Alcohol was declared 45 per cent. Found to contain 0.75 cc. of oil in 106 cc. of the preparation and 49.5 per cent added water; capsicum was present. Adulterated.

Lab. No. 4290, Insp. No. 2675. "Tr. of Ginger." Lakes' Pharmacy, Topeka. Found to contain 92 per cent alcohol. Passed.

Lab. 4291, Insp. No. 2676. "Ess. of Jamaica Ginger." J. W. Brown, Topeka. Declared U. S. P. Found to contain alcohol, 92.25 per cent. Passed.

Lab. No. 4293, Insp. No. 2678. "Spt. of Camphor." W. B. Iliff, Leocompton. Found to contain 10.19 per cent camphor.

Lab. No. 4297, Insp. No. 2682. "Sulphur." Examined for adulteration. Passed.

Lab. No. 4301, Insp. No. 2686. "Tr. of Cinnamon." U. P. Pharmacy, Topeka. Contained no extractive or glycerine. Artificially colored. Contained 87 per cent alcohol. Adulterated.

Lab. No. 4303, Insp. No. 2688. "Ess. of Peppermint." Campbell Drug Company, Topeka. Found to contain 1.6 cc. of oil in 100 cc. of essence, and 35 per cent added water. Adulterated.

Lab. No. 4310, Insp. No. 8545. "Spt. of Camphor." Retailer, D. H. Kurtz, Fort Scott. Found to contain 10.5 per cent camphor. Passed.

Lab. No. 4311, Insp. No. 8546. "Tr. Gentian Compound."

Freeman Bros., Parsons. Found to contain 48.5 per cent alcohol and 4.523 gms. of extractive in 100 cc.

Lab. No. 4312, Insp. No. 8547. "Ess. of Peppermint." Retailer, J. Stanley Tinder, Parsons. Found to contain 7.32 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4313, Insp. No. 8548. "Ess. of Peppermint." U. S. Pharmacy, Parsons. Contains 16.3 cc. of oil in 100 cc. of essence, and a trace of added water. Contains oil of spearmint. Adulterated.

Lab. No. 4314, Insp. No. 8549. "Tr. of Opium." Chas. Woolven, Oswego. Found to contain 1.21 per cent morphine. Passed.

Lab. No. 4315, Insp. No. 8550. "Tr. Ginger." Kingsberry & Frick, Oswego. Found to contain 80 per cent alcohol. Preparation was not very pungent. Adulterated.

Lab. No. 4316, Insp. No. 8551. "Spt. of Peppermint." Cook & Young, Parsons. Found to contain 11.59 cc. of oil in 100 cc. of spirits. Above standard.

Lab. No. 4318, Insp. No. 8553. "Tr. of Iodine." Bush's Pharmacy, Chetopa. Found to contain 4.11 gms. iodine and 2.58 gms. potassium iodide in 100 cc. of tincture, and 3.7 per cent of added water. Adulterated.

Lab. No. 4319, Insp. No. 8554. "Ess. of Peppermint." G. P. Roberts & Co., McCune. Found to contain 8.69 cc. of oil in 100 cc. of spirits. Below standard.

Lab. No. 4320, Insp. No. 8555. "Ess. of Peppermint." Roy Bertholf, Cherokee. Found to contain 9.01 cc. of oil in 100 cc. of essence, and a trace of added water.

Lab. No. 4323, Insp. No. 8558. "Tr. of Opium." Retailer, J. D. Mundis & Co., Iola. Manufactured by Parke, Davis & Co., Detroit. Found to contain 1.21 per cent morphine. Passed.

Lab. No. 4325, Insp. No. 8560. "Tr. Gentian Compound." Dr. H. A. Brown, Iola. Found to contain 58.75 per cent alcohol, and 3.877 gms. of extractive in 100 cc.

Lab. No. 4328, Insp. No. 8563. "Spt. of Peppermint." F. W. Butler, Yates Center. Found to contain 10.77 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4329, Insp. No. 8564. "Tr. Ginger." Johnson Drug Company, Yates Center. Found to contain 92.5 per cent alcohol. Passed.

Lab. No. 4330, Insp. No. 8565. "Tr. of Iodine." Retailer, W. L. Clark, Iola. Found to contain 7.5 gms. iodine and 5.85 gms. potassium iodide in 100 cc. of tincture. Above standard.

Lab. No. 4331, Insp. No. 8566. "Tr. of Iodine." C. L. Cowen, Iola. Found to contain 6.9 gms. of iodine and 4.89 gms. potassium iodide in 100 cc. tincture. Passed.

Lab. No. 4332, Insp. No. 8567. "Tr. of Ginger." Sheets Bros. Pharmacy, Mound City. Found to contain 92 per cent alcohol. Passed.

Lab. No. 4334, Insp. No. 8569. "Tr. Ginger." L. A. Lhuillier, Pleasanton. Examined for adulteration. Passed.

Lab. No. 4338, Insp. No. 8573. "Dr. Ball's Ess. of Peppermint." Manufactured by Dr. S. E. Ball, Mapleton. A preparation put up for wagon trade. Declared to contain 50 per cent alcohol. Found to contain 3.2 cc. of oil in 100 cc. of the preparation, and 46.5 per cent added water. Artificially colored, dark bluish green. Adulterated.

Lab. No. 4339, Insp. No. 8574. "Dr. Ball's Ess. Jamaica Ginger." Manufactured by Dr. S. E. Ball, Mapleton. Alcohol declared, 50 per cent. Found to contain 45.75 per cent alcohol. Adulterated.

Lab. No. 4340, Insp. No. 8575. "Ess. of Jamaica Ginger." C. M. Eaton Pharmacy, Humboldt. Found to contain 92.5 per cent alcohol. Passed.

Lab. No. 4342, Insp. No. 8577. "Tr. of Opium." Hess Drug Company, Humboldt. Found to contain 1.18 per cent morphine. Passed.

Lab. No. 4343, Insp. No. 8578. "Ess. of Peppermint." Dunning Drug Company, Chanute. Found to contain 8.72 cc. of oil in 100 cc. of essence and 6.4 per cent added water. Adulterated.

Lab. No. 4344, Insp. No. 8579. "Tr. of Opium." A. F. Levereny, Chanute. Found to contain 1.2 per cent morphine. Passed.

Lab. No. 4346, Insp. No. 8581. "Ess. of Peppermint." Wm. Wright, Elk City. Found to contain 9.98 cc. of oil in 100 cc. of spirit. Passed.

Lab. No. 4347, Insp. No. 8582. "Tr. of Opium." Jno. Kaff, Longton. Found to contain 1.2 per cent morphine. Passed.

Lab. No. 4348, Insp. No. 8583. "Tr. of Ginger." H. G. Farris, Moline. Found to contain 93 per cent alcohol. Passed.

Lab. No. 4350, Insp. No. 8585. "Ess. of Peppermint." R. L. Bailey, Burden. Found to contain 8.91 cc. of oil in 100 cc. of essence.

Lab. No. 4354, Insp. No. 8589. "Tr. of Gentian Co." The Arlington Drug Store, Wellington. Found to contain 47.75 per cent alcohol and 5.166 gms. of extractive in 100 cc. of tincture.

Lab. No. 4355, Insp. No. 8590. "Spt. of Camphor." Galloup

& Crow, Wellington. Found to contain 8.62 per cent camphor. Below standard.

Lab. No. 4357, Insp. No. 8592. "Ess. of Jamaica Ginger." Fred W. Olmstead, Anthony. Found to contain alcohol, 91.75 per cent.

Lab. No. 4359, Insp. No. 8594. "Tr. of Iodine." Miller & Whinery, Oxford. Found to contain 6.42 gms. iodine and 4.24 gms. potassium iodide in 100 cc. of tincture.

Lab. No. 4360, Insp. No. 8595. "Tr. of Opium." J. R. Crump, Caldwell. Found to contain 1.22 per cent morphine. Passed.

Lab. No. 4362, Insp. No. 8597. "Spts. of Nitre." Manufactured by VanNatta Drug Company, St. Joseph, Mo. Jobber, Wholesale Grocery Company, Anthony. Declared to contain alcohol 92 per cent, ethyl nitrite 4 per cent. Found to contain 3.78 per cent ethyl nitrite. Dispensed in transparent bottle.

Lab. No. 4366, Insp. No. —. "Ascatio." Sent in by Dr. W. P. Wilson, Onaga. Preparation found to be a strong solution of arsenic.

Lab. No. 4368, Insp. No. 2683. "Catnip—Pressed Herb." Eight ounces of this preparation were sent in to the laboratory—two ounces put up by Huber & Fuhrman Drug Mills, Fond du Lac, Wis., and six ounces put up by Parke, Davis & Co., Detroit, Mich. The Parke, Davis & Co. samples were found to be badly eaten by drug mites. One hundred were obtained from one-half of a 1-ounce package. Deteriorated.

Lab. No. 3001, Insp. No. 1981. "Dr. Clifton's Brazilian Herbs." Declared by the manufacturer to cure indigestion, dyspepsia, etc. Total ash, 7.99 per cent; insoluble ash (sand) 2.2 per cent. Found to be composed largely of senna siftings and Rumex.

Lab. No. 3105, Insp. No. 2085. "Tousley's Sneezeless Snuff." Manufactured by M. G. Tousley, Chicago, Ill. Claimed by the manufacturer to be a snuff for headache, catarrh and cold. Sample contained borax, menthol, traces of quinine and morphine.

Lab. No. 3550, Insp. No. 2228. "Syrup of Squilla." J. M. Bowen & Co., Atchison. Contained a slight sediment. Sp. gr. 1.259.

Lab. No. 2562, Insp. No. 2240. "Pills of Phosphorus and Strychnine." Manufactured by Parke, Davis & Co., Detroit, Mich. Retailer, W. V. Ingham, Atchison. Passed.

Lab. No. 4061, Insp. No. 2531. "Tr. of Cinchona." Retailer, J. R. Gardner, Wichita. Found to contain 0.179 gm. ether-soluble alkaloids in 100 cc. Sample contains a large amount of sediment.

Tincture of cinchona should contain 0.75 gm. ether-soluble alkaloids in 100 cc. Below standard.

Lab. No. 4072, Insp. No. 2542. Label, "Belladonna." Racer Drug Company, Wichita. Sample was found to be tincture of nuxvomica. Contained a slight sediment. Misbranded.

Lab. No. 4116, Insp. No. 8488. "Tr. of Belladonna Leaves." Geo. R. Bassett & Co., Wichita. Found to contain 0.045 gm. mydriatic alkaloids to 100 cc. U. S. P. requires 0.03 gm. Above standard.

Lab. No. 4145, Insp. No. 8517. "Fl. Ext. of Nux Vomica." Shelley Drug Company, Wichita. Found to contain 0.866 gm. strychnine in 100 cc. and 72.25 per cent alcohol. Sample should contain 1 gm. strychnine in 100 cc. Below standard in alkaloidal strength.

Lab. No. 4241, Insp. No. 2630. "Magic Face Lotion." Brown & Smith Barber Supply Company, Leavenworth. Declared to contain 6 per cent of alcohol. Found to contain boric acid and 6.4 per cent of alcohol.

Lab. No. 4327, Insp. No. 8562. "Fl. Ext. of Nux Vomica." Scarlett's Palace Drug Store, Yates Center. Found to contain 0.959 per cent strychnine. U. S. P. requires 1 per cent. Contained 67.4 per cent of alcohol.

Lab. No. 4341, Insp. No. 8576. "Tr. of Opium." F. A. Cooksey, Humboldt. Sample lost in transit.

Lab. No. 4403, Insp. No. 2696. "Vernal Nerve Food Tablets." Prepared for the Vernal Remedy Company, Le Roy, N. Y. Found to contain carbonate of iron, starch and strychnine. Tablets are not a food. Misbranded.

Lab. No. 4404, Insp. No. 2697. "Lange's Ext. of Jamaica Ginger." Adolf Lange, Leavenworth. Declared to contain about 75 per cent of alcohol. Found to be a brown liquid containing some brown-colored sediment. It is stated by the manufacturer that "This *essence* must always be taken in a little water." Found to contain capsicum and 65.5 per cent alcohol. Adulterated.

Lab. No. 4408, Insp. No. 2701. "Ext. of Ginger, U. S. P." A. C. Klingman, Topeka. Found to contain 85.5 per cent alcohol and added water.

Lab. No. 4410, Insp. No. 2700. "Fl. Ext. of Stramonium Seeds." Found to contain 0.066 per cent mydriatic alkaloids. Old stock. Fluid extract of stramonium seeds was official in U. S. P., 1890.

Lab. No. 4419, Insp. No. 2712. "Spt. of Camphor." Found to

contain 4.67 per cent camphor, 45.2 per cent added water, and a large amount of sediment. Adulterated.

Lab. No. 4420, Insp. No. 5020. "Luxor." Made by H. S. Peterson Company, Chicago. Eczema remedy, recommended by the manufacturer for all forms of eczema. Sample was put up in a two-ounce package and retailed for fifty cents. Found to contain oxide of zinc and boric acid.

Lab. No. 4421, Insp. No. 2714. "Spt. of Camphor." Found to contain 7.84 per cent camphor and a slight sediment. Below standard.

Lab. No. 4429, Insp. No. 5009. "Flowers of Oxzoin." Prepared by E. Vergil Neal, Syracuse, N. Y., Paris, France, and London, England. Guaranteed by the To-Kalon Manufacturing Company, Syracuse, N. Y. Sample was a two-ounce bottle about one-fourth filled with a pink solid, above which was a clear liquid. The solid was found to be zinc oxide, the liquid a weak solution of glycerine and water, containing in solution also a very small amount of zinc sulphate. Sample contained 17 gms. of zinc oxide to each two ounces of mixture. This preparation was declared by the manufacturer to be unsurpassed for restoring a youthful appearance and a velvet-like softness to the skin. "A sovereign remedy for the treatment of eczema, rash, irritation, pimples, blackheads, salt rheum and other skin diseases. In case of severe skin diseases, the contents of bottle are recommended to be mixed with 1 dram tr. of benzoin, 2 oz. rose water, and 1 dram resorcinal. For general use, mix with 1 dram tr. of benzoin and 2 oz. rose water."

Lab. No. 4430, Insp. No. 3010. "Sartoin." Prepared by the Globe Pharmaceutical Company, Chicago. Sartoin has been examined by the American Medical Association and reported to be Epsom salt, perfumed, and colored with pink dye. Sartoin is recommended by the manufacturer to be used in the preparation of a face lotion.

Lab. No. 4434, Insp. No. 5014. "Beta-Quinol." Manufactured by the Cooper Pharmacal Company, Chicago. Recommended by the manufacturer for dandruff, falling hair, and as a stimulating, cooling and invigorating application. Alcohol declared by the manufacturer, 50 per cent. Found to contain 43.05 alcohol and small quantities of beta naphthos, resorcinal, menthol, and quinine.

Lab. No. 4435, Insp. No. 5015. "Quin-Tone." Manufactured by the Quin-Tone Company, Detroit, Mich., and Windsor, Canada. Claimed by the manufacturer to be used in the treatment of the

scalp, and intended to be of value in the treatment of eczema of scalp, dandruff, and falling hair. Sample was put up in two-ounce package and retailed for seventy-five cents. Found to be hyposulphite of soda with a small amount of borax. Contains no quinine, and the name "Quin-Tone" is misleading.

Lab. No. 4438, Insp. No. 5018. "Therox." Manufactured by the American Therox Company, Detroit, Mich., and Windsor, Canada. Therox is put up by the manufacturer for the preparation of Therox shampoo. The directions are to mix Therox with powdered orris root and use as a dry shampoo. Therox was found to be commercial borax with a small amount of siliceous substance resembling talcum. Preparation was put up in a four-ounce package and retailed at seventy-five cents.

Lab. No. 4441, Insp. No. 5021. "Parnotis." Made by the manufacturer, H. S. Peterson, Chicago, Ill., for a flesh-reducing remedy. Parnotis was found to be bicarbonate of soda and sodium sulphate (Glauber's salts). Sample was put up in a two-ounce package and retailed at fifty cents.

Lab. No. 4442, Insp. No. 5022. "Crystos." Recommended by the manufacturer, H. S. Peterson, Chicago, Ill., for sore eyes, granulated lids, weak eyes, and inflamed eyes. Crystos was found to contain boric acid, borax and salt. Sample was put up in a one-ounce package and retailed at fifty cents.

Lab. No. 4443, Insp. No. 5023. "Spurmax." Made by H. S. Peterson, Chicago, Ill., to be used in the preparation of a face lotion. Previously examined in this laboratory and reported to be Epsom salts, perfumed, and tinted pink. Spurmax was put up in a two-ounce package and retailed at fifty cents.

Lab. No. 4444, Insp. No. 5024. "Almozoin." Manufactured by H. S. Peterson, Chicago, Ill. The manufacturer states: "Use Almozoin for making complexion jelly." "Recommended for cleansing, soothing and healing the skin and keeping the skin smooth, moist and pliable; also for freckles and blackheads." Almozoin was found to contain tragacanth, borax and magnesium carbonate. Sample also contained some pink dye and had an odor of benzaldehyde. Almozoin was put up in a one-ounce package and retailed at fifty cents.

Lab. No. 4445, Insp. No. 5025. "Quinzoin." Manufactured by H. S. Peterson, Chicago, Ill. Preparation is recommended by the manufacturer for dandruff, itching scalp, falling hair, and promoting growth of new hair. The directions are to add the contents of package to one-half pint of alcohol, macerate thirty minutes, add

one-half pint cold water, and strain. Sample was found to contain 50.4 per cent of bicarbonate of soda, a small quantity of quinine sulphate, and approximately 49 per cent of coarsely ground quassia. Quinzoin was put up in a one-ounce package and retailed at fifty cents.

Lab. No. 4446, Insp. No. 5026. "Canthrox." Manufactured by H. S. Peterson, Chicago, Ill. Canthrox is recommended by the manufacturer as a shampoo. Canthrox is principally a cocoanut-oil soap. Sample was put up in a two-ounce package and retailed at fifty cents.

The Question of Summer Clothing.

The question of summer clothing is one which gives much trouble to the doctor handling these cases. With the first warm days of spring our patients, especially the ladies, besiege us with requests for permission to change their underclothing, and if, having yielded to the cajolery of the sex, we weakly give in we are pretty sure to regret it when the temporary warmth of the warm spell is followed by a cold snap and our patients begin to report colds in the head and such things due to insufficient clothing in cold weather.

The principle exemplified in the possibly vulgar or apt saying, "Stick to your flannels till your flannels stick to you," is after all the safest guide; that is, to keep to your winter clothing just as long as you possibly can, even if they are rather too warm for comfort.

As to the time when one can safely change to summer clothing, there is no exact date. It not only varies with the latitude but with each year, and the man who sets a fixed date for changing his clothing is as foolish as the apartment-house owner who puts out his furnace on a given day in the spring whether the weather be as warm as it should be or yet cold, or those amusing city fathers in some of our smaller country towns who do not light the street lamps on the nights when the moon is due even if it happens that the skies are overcast and black.—*The Journal of the Outdoor Life.*

"I expect to pass through this world but once. Any good thing, therefore, that I can do, or any kindness that I can show to any living being, let me do it now, let me not defer nor neglect it. I shall not pass this way again."

To Dress Fowl.

TO DRESS CHICKENS.—Kill by bleeding in mouth or opening the veins of the neck; hang by the feet until properly bled. Leave head and feet on and do not remove intestines nor crop. For scalding chickens the water should be as near the boiling point as possible without boiling, 160 to 175 degrees Fahrenheit; pick the legs dry before scalding; hold by the head and legs and immerse and dip up and down five or six times; if the head is immersed it turns the color of the comb and gives the eyes a shrunken appearance, which leads buyers to think the fowl has been sick; the feathers and pin feathers should then be removed immediately while the body is warm, very cleanly and without breaking the skin; then "plump" by dipping ten seconds in water nearly or quite boiling hot and then immediately into cold water; hang in a cool place (or better, place on shelves in the shape you wish them to appear when cooled—hanging draws the breast muscles and makes them look thinner when cool and harder to pack) until the animal heat is entirely out of the body. To dry-pick chickens properly, the work should be done while the chickens are bleeding; do not wait and let the bodies get cold. Dry-picking is much more easily done while the bodies are warm. Be careful not to break and tear the skin.

TO DRESS TURKEYS.—Observe the same instructions as given for preparing chickens, but always dry-pick. Pick when warm to avoid tearing. The tail feathers come off with a twist; a straight pull will "set" them. Dressed turkeys when dry-picked always sell better and command better prices than scalded lots, as the appearance is brighter and more attractive.

DUCKS AND GESE.—Should be scalded in the same temperature of water as for other kinds of poultry, but it requires more time for the water to penetrate and loosen the feathers. Some parties advise, after scalding, to wrap them in a blanket for the purpose of steaming, but they must not be left in this condition long enough to cook the flesh. Do not undertake to dry-pick geese and ducks just before killing for the purpose of saving the feathers, as it causes the skin to become very much inflamed and is a great injury to the sale. Do not pick the feathers off the head; leave the feathers on for two or three inches on the neck. Do not singe the bodies for the purpose of removing any down or hair, as the heat from the flame will give them an oily and unsightly appearance.

After they are picked clean they should be held in scalding water about ten seconds for the purpose of plumping, and then rinsed off in clean cold water.

Rabies.

By Dr. S. E. GREENFIELD, Bacteriologist State Board of Health.

During the past winter and spring so many reports have come to notice where persons and live stock have been bitten by rabid dogs that the situation has become grave if not to say alarming. The extensive epidemic of rabies which has prevailed in the Eastern states for some time is being extended to Kansas.

Kansas has been so free from this disease in times past that the physicians and people of the state are slow to realize the condition which is now developing. In fact the existence of hydrophobia was a subject open to much discussion in the city of Topeka two or three years ago, when the advance guard of the present epidemic made its appearance, for in the memory of the oldest inhabitant, and of the oldest practitioner of medicine as well, no authentic cases of hydrophobia had ever occurred in the vicinity.

Many cases occurring throughout the state are not reported, nevertheless sufficient data have been collected to warrant us in making a very gloomy forecast for the immediate future if radical measures for the suppression of the disease are not adopted at once. It is not possible to determine the actual number of animals bitten by by one rabid dog running at large. The list of animals which were bitten in Kansas during the past winter and spring includes nearly all the domestic animals, many of which developed the disease. A report from one locality shows that three cats, three cows and two hogs were lost from the ravages of a mad dog. Another locality reports several hogs and two cows bitten by a mad cat. I wish to emphasize the gravity of the condition in the animals because as a rule where animals are the only victims little attention is paid to it and little or nothing is done in the way of quarantine, and as a result the disease is widely disseminated.

Distinction must of course be made between the bite of a vicious dog and the bite of a rabid dog. Many mad dog scares have had no more foundation than that of a vicious dog which had gone on a rampage. But where a hitherto gentle dog suddenly becomes vicious and runs away from home to indulge in an orgie of blood and ruin it is a most serious event, and a vigorous quarantine of all dogs, both in the immediate and remote vicinity, should be es-

tablished at once, together with the isolation of all animals which have been bitten. The muzzling of dogs has freed England from hydrophobia and it is only a question of time when the American people will awake to the situation and quickly remove it from our midst.

A Test for Fresh Eggs.

If an egg is fresh, when placed in a glass of water it will remain resting on the bottom of the vessel; if not quite fresh it will rest with the big end raised higher than the small end, and the higher the big end is raised the older is the egg. As the egg gets older the water contained in the white of an egg evaporates, and this causes the empty space at the thick end of the egg to become enlarged. The larger the empty space the more the egg rises in the water, till in course of time it floats.—*Exchange.*

Insurance Misinformation.

If one is to believe all the statements made by applicants for life insurance policies, some families have been distinguished by very curious, not to say inexplicable, happenings. The *British Medical Journal* selects a few of the most amusing blunders:

"Mother died in infancy."

"Father went to bed feeling well, and the next morning woke up dead."

"Grandfather died suddenly at the age of 103. Up to this time he bid fair to reach a ripe old age."

"Applicant does not know anything about maternal posterity, except that they died at an advanced age."

"Applicant does not know cause of mother's death, but states that she fully recovered from her last illness."

"Applicant has never been fatally sick."

"Father died suddenly; nothing serious."

"Applicant's brother, who was an infant, died when he was a mere child."

"Grandfather died from gunshot wound, caused by an arrow, shot by an Indian."

"Applicant's fraternal parents died when he was a child."

"Mother's last illness was caused from chronic rheumatism, but she was cured before death."

Chile Saltpeter Prohibited.

The Bureau of Animal Industry has issued an order prohibiting the use of Chile saltpeter in curing meats. This does not affect the use of ordinary saltpeter, potassium nitrate.

Sanitary Maxims of Great Men.

"Without health, life is no life.—*Doctor Rabelais*.

"Give him air, he'll straight be well."—*Shakespeare*.

"Hygiene can prevent more crime than any law."—*Hugo Munsterberg*.

"National hygiene and preventive measures can rid mankind of disease."—*Metchnikoff*.

"Sanitary instruction is even more important than sanitary legislation."—*Earl F. Derby*.

"A state which will not prevent what can be foreseen is open to indiotment."—*Munsterberg*.

"The preservation of national vigor should be a matter of patriotism."—*President Roosevelt*.

"There is a budget which we pay with frightful regularity; it is that of unnecessary disease and premature death."—*Irving Fisher*.

"Health is the essential factor in productiveness, prosperity and happiness, and hence in the advancement of civilization."—*Sir Frederick Treves*.

"We should every one of us individually and collectively, as a commonwealth, feel the need of cutting down consumption, this grinding tribute, by reducing to the vanishing point its incursions."—*Osler*.

Show me the church that will take for its creed the words of Jesus: "Thou shalt love the Lord thy God with all thy mind, heart, soul and strength, and thy neighbor as thyself" and I will hasten to join it.—*Abraham Lincoln*.

"If it is Christian to cure it is Christian to prevent. If it is Christian to cure children's diseases, it is Christian to provide clean streets. A sanitary inspector may be as religious as a church visitor."—*Rev. Herbert Welch, President Ohio Wesleyan University*.

"Now, do take warning by me. I am set up by a beneficent providence at the corner of the road, to warn you to flee from the hebetude that is to follow. So remember to keep well; and remember anything than not to keep well; and again I say, anything rather than not to keep keep well."—*Robert Louis Stevenson.*

"If we had, through the misfortunes of war, or the sudden rise of pestilence, or through some awful calamity, the destruction of life that annually takes place on account of the spread of this disease (tuberculosis), we should be appalled and mass meetings would be held in every community and demand would be made that the most urgent measures should be adopted. It is only because we are accustomed to this waste of life and are prone to think that it is one of the dispensations of Providence that we go on about our business, little thinking of the preventive measures that are possible."—*Charles E. Hughes, in Bulletin Indiana State Board of Health.*

State Board of Health Notes.

The pollution of inter-state streams used as a source of domestic water supply should be prohibited by the federal government.

Every case of infantile spinal paralysis should be immediately reported to this department, and to the local health officer.

Municipal inspection of all meats and meat products not under federal inspection was endorsed by the recent conference of state and provincial boards of health.

The tin can or bottle in the back yard or alley may not only contain rain water, but may also contain discomfort or sickness in large quantities by affording a breeding place for mosquitoes.

The plans for a modern home are not complete or up-to-date unless they include an outside sleeping porch.

Every city of the first class should have a tuberculosis sanatorium or camp. The capital city is to be congratulated upon the establishment of a camp for her tubercular poor.

Sixty thousand children in France were removed from homes infected with tuberculosis during 1909.

Seventy-nine per cent of the children exposed in infected homes were found to be infected with tuberculosis.

The value of vital statistics increases in proportion to the nearness of the application of the data gathered.

The ordinary storm window, storm door, and chest protector are the inventions of the devil. The troublesome boy of the home who is always leaving the door open in the wintertime is a real benefactor to the family, therefore deal gently with him.

With proper ventilation and heating of the schoolroom and an abundance of fresh air in the home, especially the bedrooms, together with properly selected and prepared foods, the cases of physical "break-downs" due to over-study would practically disappear.

Although the State Board of Health took no action in the matter, yet in not a single instance where the health officer showed sufficient interest in the work of his office to attend the annual conference with the State Board of Health was that officer displaced by another. . Funny, isn't it?

The quarantine law provides that the attending physician placard the house and institute the quarantine in cases of diseases dangerous to the public health, and then immediately notify the local health officer. It is not the business of this health officer to institute quarantine, but it is his duty to see that the quarantine law is enforced.

MY CREED.

I would be true, for there are those who trust me;
I would be pure, for there are those who care;
I would be strong, for there is much to suffer;
I would be brave, for there is much to dare.
I would be friend of all, the foe, the friendless;
I would be giving and forget the gift;
I would be humble for I know my weakness;
I would look up and laugh and love and lift.

—*Howard A. Waters.*

Tuberculosis Notes.

Every uncared for tuberculosis case infects two others before death.

At the annual meeting of the Chicago, Rock Island & Pacific railroad surgeons, recently held at Dallas, Tex., the action of the Kansas State Board of Health in abolishing the common drinking cup was heartily indorsed.

If fresh outside air will cure tuberculosis, pneumonia and a lot of other things, it certainly won't hurt a healthy person. Open up your windows and get a little in your offices and homes, and set a good example to the laymen.

Twenty thousand dollars was appropriated by the last legislature to fight San José scale, affecting the orchards in about half a dozen counties in the state. By the greatest effort, and after it was once defeated, \$10,000 was appropriated for two years to fight tuberculosis, affecting all the folks in all the counties of the state, of whom 1500 die annually. Better be a Ben Davis apple.

In order to show that spitting on the sidewalks is dangerous to health, an investigation has been made by Dr. John Robertson, medical health officer of Birmingham, England, which shows that seven per cent of the "spits" collected in public places contained consumption germs. On the other hand the dust collected from the floors of the cottages of the Adirondack Cottage Sanitarium has been found to be free of tuberculosis germs, showing that a careful consumptive is not dangerous.

A significant phase of the campaign against tuberculosis in Sweden is the establishment, by various industrial concerns, of sanatoria for tuberculous workmen from their own factories. The Vulcan Match Company, the Ljusne-Voxne Timber Company, the Sandviken Hardware Company, the Eriksson Telephone Company and the Stora Kopparberg Company, are among those who maintain such institutions, each accommodating from fifteen to thirty patients. At these sanatoria the workmen are received free, and their families may be admitted for a small charge.

The compulsory state system of sickness insurance instituted in 1884 in Germany has proved a powerful factor in combating tuberculosis. No less powerful have been the public sanatoria, the number of beds in which have increased during the past fifteen years from 243 to 8422. Of the 200 tuberculosis sanatoria and hospitals in Germany, 35 are supported by the carriers of sickness insurance. The statistics of the Imperial insurance department show that as many as 42 per cent of the number of persons treated in these institutions remained in good working health five years after being dismissed from the sanatorium.

Consul-General George Horton has made a report from Athens on the conspicuous work of Greek physicians in combating the country's two chief scourges—malarial fever and tuberculosis. An annual average of 2000 persons die each year from the former, while in epidemic years, due to excessive rains, the number exceeds 6000, which was the case in 1905. The population of Greece is 2,433,806. The people have been interested through lectures, pamphlets, etc., to fight the malaria-carrying mosquito by draining stagnant ponds and throwing petroleum on them. A tuberculosis congress will be held in Athens next year, to which will be invited not only physicians, but all the mayors and other prominent people of Greece.

The Little Red Flag.

MRS. JESSIE UERNER.

I.

Oh say, do you see, floating out from that porch,
That bright little flag like a flame from a torch?
It says to the inmates, "You can't do as you please,
I am here for protection from death and disease.

II.

"By the hand of the law I am kept in my place
Until of disease there is left not a trace;
Until every germ is conquered by science,
With which the just law has formed an alliance.

III.

"There are some who regard me as a mark of disgrace,
And weep every time they look on my face.
My mandates in secret some fain disobey,
Thus challenging Death to have his own way.

IV.

"E'en some of the doctors appear much afraid
To use me, lest I interfere with their trade.
The sire of my patient they say has much land,
Has much stock to feed, much gold in his hand.

V.

"To quarantine him might cut off my head
And turn me in search of my butter and bread.
The red flag must be kept for the home of the poor—
Has practiced endurance, knows how to endure.

VI.

"A boon to the many, a dread to the few,
I am to my mission unswervingly true.
Though at present to many I have an ill savor,
Some day every one will regard me with favor."

OSAGE CITY, KAN.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 6.

JUNE, 1910.

VOL. VI.

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A paradox—the fly is on the run.

There were more deaths from measles last month than from diphtheria, scarlet fever and smallpox combined.

The moral standard of a nation is the altitude of moral attainment of a people in their struggle toward perfection.—*Estey.*

The State Board of Health has declared measles a disease dangerous to the public health, and requires quarantine for all cases. See notice in this BULLETIN.

The prolongation of life by the suppression of preventable diseases is of much greater value to the state than the cost of the means employed.—*G. W. Webster, M. D.*

At the annual meeting in June the State Board of Health included anterior poliomyelitis, typhoid fever and ophthalmia neonatorum in the reportable diseases to this office through the local health officers. Physicians please take notice.

Ex-President Roosevelt, as a child, was both weak and timid. His present strength and courage came largely from persistent exercise and outdoor life. Similar transformations in health occurred in the cases of Cæsar, Calvin, Kant, Humboldt, Gibbon, Tolstoi and others.

VITAL STATISTICS

Reported to the Kansas Board of Health for May, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State...total, May, 1909.....	258 79	65 71	31 29	11 5	68 82	7 12	181 148	10 5	304 461	1 0	1488 1188	25 9
Allen	3	3	4	0	1	0	14	0	7	0	0	0
Anderson	1	1	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	2	0	1	0	0	0	0	0
*Barber	0	0	0	0	1	1	22	3	0	0	0	0
Barton	0	0	0	0	0	0	0	0	0	0	4	0
Bourbon	0	0	0	0	0	0	0	0	0	0	8	0
Brown	1	1	0	0	0	1	0	0	4	0	8	0
Butler	0	0	0	0	0	0	0	0	0	0	2	0
Chase	0	0	0	0	0	0	0	0	0	0	1	0
Chautauqua.....	2	2	0	0	0	0	0	0	0	0	42	4
Cherokee.....	4	4	2	1	0	0	1	0	0	0	17	1
Cheyenne.....	0	0	0	0	0	0	0	0	0	0	0	0
Clark	0	0	1	0	0	0	0	0	0	0	3	0
Clay	1	1	0	0	0	0	0	0	0	0	1	0
Cloud	0	0	0	0	0	0	0	0	0	0	1	0
Coffey	2	2	0	0	1	0	1	1	0	0	1	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley.....	2	2	0	0	3	0	0	0	9	0	0	0
Crawford.....	2	2	1	1	0	0	0	0	0	0	4	4
Decatur.....	1	0	0	0	1	0	0	0	3	0	1	0
Dickinson.....	1	1	0	0	1	0	1	0	6	0	11	0
Doniphan.....	0	0	0	0	0	0	0	0	0	0	0	0
Douglas.....	0	0	1	1	0	0	1	0	0	0	22	0
Edwards.....	1	0	0	0	0	0	0	0	2	0	20	0
Elk	0	0	0	0	0	0	0	0	2	0	1	0
Ellis	2	2	0	0	0	0	0	0	0	0	2	0
Ellsworth.....	0	0	0	0	0	0	1	0	0	0	23	0
*Finney.....	0	0	0	0	0	0	0	0	0	0	0	0
Ford	0	0	0	0	0	0	0	0	0	0	0	0
Franklin.....	2	2	0	0	0	0	0	0	0	0	0	0
Geary.....	2	2	2	0	3	0	0	0	0	0	7	1
Gove.....	0	0	0	0	1	0	0	0	0	0	40	0
Graham.....	0	0	0	0	0	0	0	0	6	0	4	0
*Grant.....	0	0	0	0	0	0	0	0	0	0	0	0
*Gray.....	0	0	0	0	0	0	0	0	0	0	0	0
*Greeley.....	0	0	0	0	0	0	1	0	43	0	6	0
Greenwood.....	0	0	0	0	0	0	0	0	0	0	0	0
Hamilton.....	0	0	0	0	0	0	1	0	1	0	0	0
Harper.....	0	0	0	0	0	0	1	0	4	0	58	0
Harvey.....	1	0	0	0	0	0	0	0	0	0	0	0
*Haskell.....	0	0	1	0	0	0	0	0	0	0	0	0
Hodgeman.....	0	0	0	0	0	0	1	0	0	0	25	1
Jackson.....	1	1	0	0	1	0	1	0	0	0	0	0
Jefferson.....	0	0	0	0	0	0	0	0	15	0	0	0
Jewell.....	0	0	0	0	0	0	0	0	0	0	0	0
*Johnson.....	1	1	0	0	0	0	0	0	4	0	2	0
Kearny.....	0	0	0	0	0	0	0	0	1	0	5	0
Kingman.....	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa.....	0	0	0	0	0	0	0	0	0	0	0	0
Labette.....	3	1	0	0	1	0	1	0	1	0	6	0
Lane.....	0	0	0	0	0	0	0	0	2	0	0	0
Leavenworth.....	0	0	0	0	0	0	0	0	0	0	8	0
Lincoln.....	1	2	0	0	0	0	1	0	0	0	2	0
Linn.....	0	0	0	0	0	0	0	0	0	0	5	0
Logan.....	0	0	1	0	0	0	0	0	0	0	0	0
Lyon.....	0	0	0	0	2	0	3	0	0	0	25	0
Marion.....	0	0	0	0	4	0	1	0	0	0	0	0
Marshall.....	1	1	0	0	1	0	0	0	0	0	7	0
McPherson.....	0	0	0	0	0	0	0	0	10	0	300	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade.....	1	1	0	0	0	0	0	0	0	0	6	0
Miami.....	0	0	0	0	0	0	1	0	1	0	8	0
Mitchell.....	0	0	1	1	0	0	11	1	0	0	44	0
Montgomery.....	0	0	0	0	0	0	5	0	14	0	61	0
*Morris.....	0	0	0	0	0	0	0	0	0	0	0	0
Morton.....	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha.....	2	2	0	0	0	0	0	0	0	0	2	0
Neosho.....	0	0	0	0	0	0	0	0	15	0	11	0
Ness.....	0	0	0	0	0	0	14	4	0	0	7	0
Norton.....	0	0	1	0	0	0	5	0	37	0	33	0
Osage.....	1	1	0	0	0	0	0	0	1	0	18	0
Osborne.....	6	0	4	0	0	0	3	0	26	0	2	0
*Ottawa.....	0	0	0	0	0	0	0	0	0	0	0	0
*Pawnee.....	0	0	0	0	0	0	0	0	0	0	0	0
Phillips.....	0	0	0	0	0	0	0	0	6	0	0	0
Pottawatomie.....	0	0	0	0	0	0	2	0	0	0	8	0
Pratt.....	0	0	0	0	0	0	1	0	0	0	80	2
*Rawlins.....	0	0	0	0	0	0	0	0	0	0	0	0
*Reno.....	0	0	0	0	0	0	0	0	0	0	0	0
Republic.....	1	0	1	0	0	0	1	0	0	0	2	0
*Rice.....	0	0	0	0	0	0	0	0	0	0	0	0
Riley.....	0	0	0	0	0	0	0	0	4	0	2	0
Rooks.....	0	0	0	0	0	0	0	0	0	0	0	0
*Rush.....	0	0	0	0	0	0	0	0	0	0	0	0
*Russell.....	0	0	0	0	0	0	0	0	0	0	0	0
Saline.....	0	0	1	0	0	0	11	0	13	0	26	0
Scott.....	0	0	0	0	0	0	0	0	1	0	1	0
Sedgwick.....	0	0	0	0	0	0	2	0	4	0	2	0
Seward.....	0	0	0	0	0	0	1	1	2	0	0	0
Shawnee.....	2	0	0	0	2	0	1	0	0	0	81	0
Sheridan.....	0	0	0	0	0	0	6	0	0	0	2	0
Sherman.....	0	0	0	0	0	0	0	0	1	0	24	0
Smith.....	0	0	0	0	0	0	0	0	0	0	0	0
Stafford.....	0	0	0	0	0	0	0	0	0	0	2	2
Stanton.....	0	0	0	0	0	0	0	0	0	0	0	0
Stevens.....	0	0	0	0	0	0	0	0	0	0	0	0
Sumner.....	2	2	1	0	5	0	0	0	4	0	10	0
Thomas.....	1	1	0	0	1	0	0	0	1	1	15	0
Trego.....	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee.....	0	0	0	0	1	0	0	0	0	0	1	0
Wallace.....	0	0	0	0	0	0	0	0	0	0	20	0
Washington.....	0	0	2	0	1	1	0	0	0	0	0	0
Wichita.....	0	0	0	0	0	0	0	0	0	0	0	0
Wilson.....	6	6	1	1	0	0	0	0	0	0	24	2
Woodson.....	0	0	0	0	0	0	0	0	0	0	8	0
Wyandotte.....	0	0	0	0	0	0	1	0	0	0	0	0
Cities:												
Fort Scott.....	2	1	2	0	0	0	2	0	0	0	52	0
Atchison.....	0	0	0	0	0	0	0	0	2	0	6	0
Coffeyville.....	1	1	0	0	0	0	1	0	2	0	11	2
Kansas City.....	12	12	11	6	15	2	37	0	14	0	62	0
Leavenworth....	1	1	1	0	3	0	4	0	1	0	34	0
Parsons.....	1	1	0	0	0	0	0	0	7	0	0	0
Pittsburg.....	1	0	0	0	2	0	15	0	0	0	3	0
Topeka.....	1	0	0	0	13	1	1	0	0	0	89	0
Wichita.....	0	0	1	0	1	1	3	0	29	0	86	5
State Institutions.	182	5	0	0	0	0	0	0	0	0	10	0

* No reports.

A summer school for health officers will be given at the Kansas University in 1911, under the auspices of the University and the State Board of Health.

The Digestibility of Unbleached and of Bleached Flour.

By J. T. WILLARD and C. A. A. UTT.

The introduction of the practice of chemically treating flour by means of nitrogen peroxide so as to whiten it and, as it is alleged, impart to it other properties ordinarily acquired only by aging it, has caused a large amount of discussion pro and con from various points of view. The results of scientific investigation have not had the concordance which inspires the confidence of the public or satisfies the disinterested observer. Arguments touching the ethics of the practice almost uniformly convey a suggestion that the pocketbook is an important factor in the problem. The financial interest of manufacturers of bleaching machinery may easily be supposed to tend to bias the judgment of such manufacturers. It is not impossible that a zeal commendable in itself may lead food commissioners and other food officials to take an extreme view concerning this practice. In view of this complex situation it is with some hesitation that the writers of the present article come forward with their contribution to the discordant accumulations of others. They believe, however, that the results of every conscientious investigation are entitled to full consideration in making up a judgment concerning any scientific problem, and from this standpoint feel justified in giving publicity to their results.

The experiments here described and stated in part were undertaken at the request of Dr. S. J. Crumbine, secretary of the Kansas State Board of Health, and have been carried out in the chemistry department of the Kansas State Agricultural College in intervals of respite from routine work. The general character of the methods employed is the same as that used in the department more than a decade ago in the study of the relative digestibility of certain foods in the cooked state as compared with the uncooked. In part they are modifications of methods employed by Stutzer, and later by Stone, in testing food substances by artificial digestion. The fundamental principle of their adaptation to the problem involved has been to employ the digestive agents at about the optimum temperature, but in such concentrations and upon such quantities as prolong the process to such an extent as to give an opportunity for differentiation in the various cases. It will be readily seen, for example, that if the actions were made so pronounced and rapid that but a few minutes were required for effecting the maximum change it would not be possible to carry out the manipulative process so

as to show differences with any exactness. Some minutes must be allowed for settling and filtration, and when this comparatively fixed time is a large proportion of the whole occupied by the experiment the relative error due to differences in respect to this must be much greater than where this period is but a small proportion of the whole.

Considerable time was spent in preliminary experiments through which the operator acquired skill, and knowledge was gained concerning the amounts required in order to prolong the process sufficiently to promote accuracy without lengthening them so much as to make them impractical. A series of experiments was then carried out with two lots of flour identical in every respect excepting that one was taken from the stream just before it entered the bleacher and the other as it left the bleacher. The bleaching agent was nitrogen peroxide as produced by the electrical process. These samples were submitted to experiments in artificial digestion by pepsin, pancreatin and diastase by methods described below. The flour was milled October 3, 1908.

A second series of experiments was begun in August, 1909, upon three flours made from the same wheat, the samples being secured directly from the mill while in transit through its machinery. The first sample was flour taken just before the stream entered the bleacher; the second was flour that had passed through the bleacher in the ordinary commercial manner; the third was flour which was kept in the bleacher a longer time so as to treat it to a considerably greater extent than the usual practice of the mill. All of the samples worked upon in this investigation were secured through the courtesy of the Manhattan Milling Company, Manhattan, Kan., to which our best thanks are at this time tendered, not only for this favor but for cordial coöperation in various other experiments touching the milling industry. To curtail the length of this paper the detailed results of the first two series of experiments will be omitted at this time and be summarized by the simple statement that no appreciable difference was observed in the rate of action of the commercial digestive ferments — pepsin, pancreatin and diastase — upon the unbleached, the commercially bleached and the over-bleached samples of flour.

The practical and scientific importance of the problem is such that it was deemed wise to conduct a third series of experiments upon another sample of flour, and this has just been concluded. The methods employed were the same in the three series of experiments excepting that in the last the relative rate of action of

saliva was also studied, and these methods will now be described before presenting in detail the figures obtained. The flour used in this series of tests was milled March 1, 1910.

The digestive process was conducted in glass beakers suspended in a capacious circular water bath in which proper temperature was maintained by a small flame below the middle of the bath, the beakers being arranged in a circle around this point and the thermometer being placed on the line connecting the centers of the beakers. It was possible to maintain a temperature very uniform throughout a test. In every case the liquid containing the material to be tested was brought to the proper temperature in the bath before the digestive enzyme was added.

The pepsin used was of a high grade commercial brand and was employed in an acid solution. In part of the tests the acidity of the liquid was 0.004 per cent and in others 0.2 per cent hydrochloric acid. One gram of the flour to be tested was cooked with a portion of the water and the pepsin was added at the last, dissolved in 10 cc. of acidified water, the total volume then being 500 cc. The digestive process was then conducted for one-half hour at 40° C. The beakers were removed from the bath, allowed to settle for ten minutes and then filtered quickly through paper. The nitrogen was determined in 250 cc. of the filtered solution, by the Kjeldahl method.

In the pancreatic digestion commercial pancreatin was used with two and one-half grams sodium bicarbonate, the liquid being finally brought to a volume of 500 cc. as with the pepsin. As in that case one gram of flour was used and was cooked with a portion of the water, and the general arrangement and procedure was the same as with the experiments with pepsin. A few trials were made with other amounts of sodium bicarbonate, as noted in the tables.

The test with diastase was conducted in a manner similar to the foregoing, but the materials in the experiment were brought to a volume of 100 cc. and the amounts of flour employed were 0.1, 0.2 and 0.5 grams. The operation was carried on at a temperature of 55° C. In these trials the progress of the hydrolysis of starch was observed by removing a few drops of the liquid, cooling and testing for starch by means of a solution of iodine, the attempt being to observe the length of time that elapsed previous to the disappearance of the reaction for starch. It is of course to be recognized that this point could not be determined with absolute sharpness, but we were unable to observe any appreciable differ-

ence in the strength of the reactions observed in the duplicate tests of the same flour and with different flours tested simultaneously.

In the experiments with saliva 5 or 10 cc. were used and 0.1 or 0.2 grams of flour. The latter was cooked as for the other tests, and the liquid brought to a volume of 100 cc. The digestion was conducted at 40° C.

It should perhaps be stated that the samples of flour were cooked in each case in order to distribute the material as finely as possible and to facilitate action upon starch by its previous gelatinization. By this procedure the several materials for testing were brought as nearly as possible to identically the same physical condition. The contents of the beakers were stirred from time to time. It would be difficult to conduct such experiments as these upon bread, as it would not be feasible to reduce the different lots to the fine and uniform condition of flour. The cooking with water brings the flour to substantially the same condition in respect to the effect produced by moist heat as is the case with the interior of a loaf.

The following tables show the results obtained with the four digestive agents as described:

ARTIFICIAL DIGESTION OF FLOUR BY PEPSIN—40° C.

Digestive liquid contained 0.004 per cent hydrochloric acid.

Serial No.	Pepsin used.	Nitrogen found in the dissolved portion, calculated to percentages of the whole amount of flour taken.		
		Unbleached flour.	Commercially bleached flour.	Strongly bleached flour.
3576	20 mg.....	1.02	1.03	1.005
		1.02	1.02	1.015
3577	10 mg.....	0.77	0.74	0.76
		0.78	0.76	0.79
3578	1 mg.....	0.66	0.67	0.67
		0.67	0.65	0.66
3579	0.1 mg.....	0.585	0.595	0.59
		0.59	0.585	0.60
3580	Acid only.....	0.60	0.63	0.60
		0.62	0.61	0.60

Another series, differing from the above only in that the liquid contained 0.2 per cent hydrochloric acid.

3581	10 mg.....	1.22	1.21	1.22
		1.215	1.21	1.21
3582	1.0 mg.....	1.075	1.09	1.08
		1.08	1.08	1.07
3583	0.1 mg.....	0.87	0.87	0.88
		0.88	0.88	0.865
3584	0.01 mg.....	0.69	0.665	0.69
		0.67	0.68	0.68
3585	Acid only.....	0.625	0.63	0.62
		0.62	0.64	0.63

The flours were identical in their nitrogen-content and contained 2.255 per cent.

ARTIFICIAL DIGESTION OF FLOUR BY PANCREATIN—40° C.

2.5 g. NaHCO₃ was used in 500 cc. of liquid.

Serial No.	Pancreatin used.	Nitrogen found in the dissolved portion, calculated to percentages of the whole amount of flour taken.		
		Unbleached flour.	Commercially bleached flour.	Strongly bleached flour.
3588	10 mg.....	0.875	0.880	0.875
		0.875	0.875	0.880
3589	1 mg.....	0.58	0.58	0.56
		0.56	0.56	0.57
3590	0.1 mg.....	0.48	0.48	0.47
		0.485	Lost.	0.48
3587	NaHCO ₃ only	0.46	0.46	0.45
		0.45	0.455	0.46

A trial was made, with the following results, using 40 mg. NaHCO₃, the amount advised by the manufacturer for 10 mg. pancreatin.

3591	10 mg.....	0.84	0.835	0.84
		0.84	0.84	0.83

DIGESTION OF FLOUR BY KAHLBAUM'S DIASTASE—55° C.

0.2 g. Flour; 100 cc. Water.

Serial. No.	Diastase.	Time required for disappearance of reaction for starch with iodine, minutes.		
		Unbleached flour.	Commercially bleached flour.	Strongly bleached flour.
3592	0 5 g.....	27	27	27
		27	27	27
3593	0.4 g....	41	41	41
		41	41	41
3594	0.3 g.....	47	47	47
		47	47	47
3595	0.2 g.....	53	53	53
		53	53	53
3596	0.1 g.....	57	57	57
		57	57	57
3597	0.05 g.....	62	62	62
		62	62	62
3598	0.025 g.....	68	68	68
		68	68	68

A trial of 0.5 g. flour gave the following result:

8599	0.5.....	93	93	93
		93	93	93

ARTIFICIAL DIGESTION BY SALIVA—40° C.

Amounts of flour and saliva as shown.

Serial No.	Flour, grams.	Saliva, cc.	Time required for disappearance of reaction for starch with iodine.
3600	0.2	5	Not complete in six hours.
3601	0.1	5	77 minutes in all cases ; duplicates used in each.
3602	0.2	5	After seven hours slight reaction for starch was still shown, of the same intensity in all the tests.
3603	0.2	10	Three hours, 25 minutes, in all cases ; duplicates used in each.

The saliva used was different for each serial number, but identical for each flour in a given test.

It seemed of interest in connection with the experiments thus far detailed to make determinations of the apparent percentage of nitrous anhydride in combination in the flours. This estimation was made upon the last lots of flour only.

For the determination of nitrous anhydride 1 gram of flour was shaken up with 50 cc. of nitrogen-free distilled water in a tall, glass-stoppered weighing bottle. This was centrifuged. Twenty-five cubic centimeters of clear liquid was made up to 50 cc. in a Nesslerizing cylinder, and to this 2 cc. of the Griess-Ilosvay reagent for nitrites was added. The color produced was compared with tubes containing known amounts of nitrite. By this method the unbleached flour was found to be free from nitrous anhydride, the commercially bleached contained 0.6 part per million, and the strongly bleached 1.1 parts per million.

The three series of experiments in connection with this investigation have included ninety-four tests by artificial digestion, each made in duplicate. In no case has a comparison of the results shown any appreciable difference between bleached flour and the corresponding unbleached sample. In view of the uniformity of these results the conclusion seems unavoidable that flour bleached to the extent that our samples were is not altered in respect to rate of digestion.

The Theory of the Parasitic Origin of Pellagra.

By C. H. LAVINDER, Past Assistant Surgeon, United States Public Health and Marine Hospital Service.

My experience and observations regarding pellagra in Italy have thus far served to make evident one fact. While, of course, the great majority of the Italian medical world hold the view that there is some important, if not well understood, etiological relation between pellagra and the use of spoiled corn as an article of diet, there are nevertheless at least some students of the disease who have begun seriously to question such an etiological relation. And this has resulted, it seems to me, in a perceptible tendency, more or less strong among certain students of pellagra, to disregard corn entirely as an etiological factor in this disease and to seek some new idea to explain its occurrence. This tendency is in the direction of some protozoal or animal parasite and has been, in all likelihood, produced and stimulated by the ideas of Sambon, first expressed in 1905 at the meeting of the British Medical Association, when he stated that he believed the disease to be caused by a protozoal parasite, probably transmitted by some blood-sucking insect.

Recently there has been formed, as announced in the medical press, a British commission for the study of pellagra, and Sambon

has been sent to Italy to try to establish his views on the etiology of the disease.

Sambon's theory has been worked out much more in detail than when first presented, in 1905, and has attracted much serious attention. I have learned personally from him that so far his work in Italy, largely of an epidemiological nature, has greatly strengthened him in his belief in the accuracy of his theory and that he feels confident of its ultimate proof.

SAMBON'S THEORY.

Succinctly expressed, this theory in its main features is as follows, the details having been kindly furnished me by Doctor Sambon:

Pellagra is not due to maize, either good or bad, because:

1. It is found in places where maize is neither cultivated nor eaten.

2. It is absent from many places where maize is the staple food of the population.

3. It has in many places either decreased or become more prevalent without any change in the food of the people.

4. Its constant and peculiar distribution does not agree with the very irregular and ever-changing distribution of spoiled maize.

5. In over a century and a half, since the maize theory was first suggested, no one has been able to prove it.

The belief that the disease has everywhere followed the introduction of corn cultivation is unfounded. Pellagra was first recognized as a specific disease in the beginning of the eighteenth century, but this does not prove that it was not prevalent long before that time.

Pellagra is a parasitic disease because:

1. For years the person affected may present some seasonal recurrences, which can only be explained by a parasitic agent with alternating periods of activity and latency.

2. It shows a constant and characteristic topographic distribution.

3. It shows a definite seasonal incidence.

4. Its symptoms, course, duration, morbid anatomy, as well as its therapy, are similar to those of parasitic diseases.

5. Of two places, almost contiguous, one may be affected, the other not.

Pellagra is an insect-borne disease because:

1. It is limited, like malaria, sleeping sickness, etc., to rural places, and more especially to the vicinity of certain water bodies.

2. It has a definite seasonal incidence—spring and autumn.
3. It affects, to a large extent, a certain class of people—the field laborers.
4. It is not contagious and neither food nor water can account for its peculiar epidemiology.
5. Within its endemic centers it affects all ages and frequently whole families.
6. Outside its endemic centers only adults who have visited the infection areas present the disease, and frequently only one or two members in a family are affected.

Pellagra conveyed by *Simulium reptans* because :

1. *Simulium* is found in the torrents and swift-running streams of all pellagra districts.
2. *Simulium* has the peculiar seasonal distribution of pellagra (spring and autumn).
3. *Simulium* is found only in rural districts. It is unknown in towns and villages. It does not enter houses.
4. *Simulium* explains most admirably the peculiar limitation of the disease to field laborers.
5. *Simulium* is the only blood-sucking insect which the British field commission has found in its visits to numerous pellagrous districts in Italy.
6. *Simulium reptans*, like *Anopheles maculipennis*, has a world-wide distribution and explains the wide distribution of pellagra. It is found wherever pellagra is found.
7. *Simulium* causes epizootics in animals in America and in Europe.
8. Professor Mesnil has found a protozoal organism in *Simulium*.

ATTITUDE IN AMERICA.

The judicial mental attitude which American investigators have so far shown with regard to the etiology of pellagra is certainly to be commended in the present unsatisfactory status of this question. The etiology of pellagra is still an open question. The belief that the disease bears some relation to spoiled corn has so dominated the etiological field and has received the support of so many men of wide experience that it cannot be now entirely disregarded; but certainly it need not be accepted with so complete a dogmatism as to prevent investigation along other suggestive lines.

The theory of Sambon has interested me greatly, and it seems that now, when this theory has been elaborated so much more in detail, it is well worthy of serious attention at the hands of American students and investigators.

How to Keep the Baby Well.

From Kansas City Health Bulletin.

Nurse Your Baby.—Mother's milk is the best of all foods. Do not wean the baby during the hot weather. Ten bottle-fed babies die to one breast-fed baby. Nurse the baby regularly, but never more often than every two hours during the day and four hours at night. Do not nurse the baby every time it cries. But give it water. If you cannot nurse your baby, consult your doctor before giving it the bottle. Give the baby only one good milk, which must be prepared exactly as the doctor may direct. Always keep the milk cold and well covered, but do not give the baby ice cold milk. Instead always have the milk warmed to the temperature of the body. Do not ask your neighbor's advice about feeding—ask your doctor.

Clothing the Baby.—The baby feels the heat more than you do. In hot weather remove most of the clothing. A loose cotton cheese-cloth shirt, without sleeves, is enough.

Bottles.—If your baby is being fed from the bottle, see that each bottle is kept absolutely clean. The only desirable nursing outfit is a plain bottle with an ordinary rubber nipple, without a tube. It is better to have two such bottles, so that one can be always sweet and clean. Do not allow the bottle to lie upon the floor where it will take up the germs of disease. Wash the bottle and nipple in boiling water with a little soda, and rinse thoroughly with clean boiling water.

Bathing.—Bathe the baby every day. Wash the baby whenever the diapers are changed, with castile soap and water. Dust with talcum powder to prevent chafing. In hot weather give the baby a cool sponge bath several times a day.

Fresh Air.—Give the baby fresh air day and night. In the cool of the morning and early evening take baby out of doors.

Keep your house sweet and clean, cool and well aired, and never allow your rooms to smell close. Screen your doors and windows so that the fly will not worry baby when sleeping, or leave disease behind to make the baby sick.

Keep the windows open all day and night. The baby should sleep alone in its own crib, or in one made from an ordinary clothes basket which is well padded. Give the baby plenty of cool, pure water several times a day.

If the baby vomits or has diarrhea, stop all feeding and give cool, pure water. Send for your doctor at once. Never give the baby

drugs or medicines except under the direction of your family physician. What has benefited your neighbor's baby may kill your baby. Soothing syrups contain opium and simply *dope* the baby.

If you will carefully follow these directions, the baby will not become ill during the summer months.

Measles.

The attention of health officers and physicians is invited to the new regulation on measles as set forth in amended regulation No. 29. At their annual meeting, held June 14, 1910, the State Board of Health, by the unanimous passage of a resolution, declared measles to be a disease dangerous to the public health, and amended regulation No. 29, which as amended reads as follows:

"29. *Placarding.* The quarantine law provides that houses where any person is sick with cholera, smallpox, scarlet fever, diphtheria, epidemic, cerebrospinal meningitis, or any disease dangerous to the public health, shall be immediately placarded, and notice given to the nearest board of health. In addition to these requirements, health officers are also required to placard all houses where there is measles, whooping cough, or chicken-pox, and restrain persons so afflicted from attending the public schools, churches or other places of public assemblage. In the case of measles, in addition to the foregoing, it is hereby required that the patient afflicted be effectively isolated or quarantined, and also that those children of the household who have not had the measles be not permitted to attend school or other places of public assemblage."

The records of this department show that for the past four years the death rate from measles has been six times greater than that from smallpox, and the returns for the past four months to this department also show that the actual number of deaths from measles in the state during that time has been more than that from diphtheria, scarlet fever and smallpox combined.

Not only is the mortality rate high from this disease as compared with other diseases of childhood, but the sequella of the disease is often of a serious nature, including that of diseases of the eye, ear, and not uncommon, by serious affections of the lungs. Every physician of experience has had cases of consumption in which it was alleged that the beginning of the disease dated from a severe attack of measles. A certain writer has declared that it is his belief that five per cent of all children who have had measles develop consumption later. The idea meant to be conveyed is that this

disease prepares a suitable soil, which, when properly seeded, rapidly produces this fatal malady.

It is, therefore, to be confidently hoped that both laymen and physicians will use greater caution and care in the control of this dangerous disease, which has hitherto excited little comment or care.

Eggs!

On and after July 1, 1910, all buyers of eggs in Kansas are expected to buy on the "loss off" basis. Cards of warning have been sent to dealers, accompanied by the following letter:

"To the Egg Dealers of Kansas:

JUNE 13, 1910.

"I am enclosing herewith a card which I respectfully request be posted in that part of your store where eggs are handled, and where it will be readily seen by those bringing in eggs to sell.

"The sale or offering for sale of eggs not fit for food is not only unlawful, but their entry into the channels of trade has the effect of reducing the price of the Kansas product below the current prices of the market, the loss of which is, of course, borne by the producer and the dealer. It is to your advantage, therefore, to use the greatest care in culling out all eggs unfit for food.

"From and after July 1, 1910, all eggs should be bought and sold on the 'loss off' basis, in order that the provisions of the law may be faithfully observed.

"The department expresses a hope that we may have your co-operation in this movement.

Very truly yours,

KANSAS STATE BOARD OF HEALTH,

By S. J. CRUMBINE, M. D.,

Chief Food and Drug Inspector."

A High-toned Patient.

From the Healthy Home.

One of America's greatest physicians was called to the bedside of a grande dame of distinguished name and many millions. The physician said: "You must get up every day at six A. M. Take for breakfast a cup of weak tea and two pieces of dry toast. From nine to eleven exercise, either walking or sweeping or dusting. At noon lunch on a slice of cold meat, filtered water and stale bread. Don't sleep in the afternoon; exercise again. For dinner take nothing but a little meat, a vegetable and toast. No sweets; no wines."

The eyes of the grande dame flashed fire as she said: "But, doctor, do you know who I am?"

"Perfectly, madame," answered the physician. "You are an old woman with a sour stomach."

The Doctor's Story.

BY WILL CARLETON.

Mrs. Rogers lay in her bed,
Bandaged and blistered from foot to head,
Bandaged and blistered from head to toe,
Mrs. Rogers was very low.
Bottle and saucer, spoon and cup,
On the table stood bravely up;
Physic of high and low degree,
Calomel, catnip, bone-set tea—
Everything a body could bear,
Excepting light and water and air.

I opened the blinds; the day was bright,
And God gave Mrs. Rogers some light.
I opened the window; the day was fair,
And God gave Mrs. Rogers some air.
Bottles and blisters, powders and pills,
Catnip, bone-set, syrup and squills,
Drugs and medicines, high and low,
I threw them as far as I could throw.
"What are you doing?" my patient cried;
"Frightening Death," I coolly replied.

Deacon Rogers, he came to me;
"Wife's coming 'round," said he.
"I really think she'll worry through;
She scolds me just as she used to do.
All the people have poohed and slurred—
And the neighbors, too, have had their word;
'T was better to perish, some of them say,
Than be cured in such an irregular way."
"Your wife," said I, "had God's good care,
And His good remedies—light, water and air.
All the doctors, beyond a doubt,
Could n't have cured Mrs. Rogers without."

The Deacon smiled and bowed his head;
"Then your bill is nothing," he said,
"God's be the glory, as you say.
God bless you, doctor; good day! good day!"

If ever I doctor that woman again,
She'll get some medicine made by men!

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 7.

JULY, 1910.

VOL. VI.

Anterior Poliomyelitis Bulletin.

Are you a swatter or breeder of flies?

The most valuable asset of a state is the health of her citizens.

The uncemented cesspool is a menace to the purity of the underground water.

Desire is the condition of attainment and the measure of success in life.—*Estey*.

The majority of those prostrated by heat are found to be frequent and heavy users of iced drinks.

In London, in the seventeenth century, the death rate averaged 80 per thousand, as against 24 to-day.

An efficient vital statistics law is necessary before we can prove that Kansas has the lowest death rate among the states.

Your family physician knows more about your ailment, and can therefore more intelligently treat your case, than the patent medicine man.

A moderate diet consisting chiefly of fruits and vegetables, with plenty of pure, fresh water, not too cold (not ice-cold), is best suited for hot weather.

The use of an abandoned well to dispose of domestic sewage will surely pollute the underground water, and is therefore a crime against the community.

Now that we know one of the ways the infectious agent producing infantile spinal paralysis is eliminated, which is through the throat membranes, the wisdom of the abolishment of the common drinking cup is again emphasized.

VITAL STATISTICS

Reported to the Kansas Board of Health for June, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
The State...total, June, 1909.....	277 91	62 55	60 48	12 6	67 38	8 2	125 72	18 6	247 182	5 1	505 331	9 1
Allen	2	2	2	2	1	0	1	0	31	0	0	0
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	1	0	2	0	0	0	0	0
*Barber	0	0	0	0	0	0	0	0	0	0	0	0
Barton	0	0	1	0	0	0	10	2	6	0	0	0
Bourbon	4	2	0	0	0	0	0	0	0	0	14	1
Brown	1	1	0	0	0	0	0	0	0	0	7	0
Butler	0	0	1	1	0	0	0	0	2	0	0	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauqua.....	1	0	1	0	0	0	0	0	0	0	2	0
Cherokee.....	3	1	0	0	1	0	0	0	4	0	2	0
Cheyenne.....	0	0	0	0	0	0	4	0	0	0	0	1
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	0	0	0	0	0	0	0	0	0	0
Coffey	2	2	1	1	0	0	0	0	0	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	1	0
Cowley.....	1	0	0	0	0	0	1	0	1	0	0	0
Crawford.....	6	6	0	0	6	1	10	2	4	1	1	0
Decatur.....	0	0	0	0	0	0	0	0	2	0	0	0
Dickinson.....	0	0	0	0	0	0	0	0	4	0	0	0
Doniphan.....	1	1	0	0	0	0	0	0	0	0	0	0
Douglas.....	0	0	0	0	0	0	1	0	0	0	3	0
Edwards.....	1	0	1	0	0	0	0	0	1	0	6	0
Elk	0	0	0	0	0	0	0	0	2	0	0	0
Ellis	0	0	0	0	0	0	0	0	0	0	0	0
Ellsworth.....	0	0	0	0	0	0	0	0	0	0	1	0
Finney.....	0	0	0	0	0	0	0	0	1	0	7	0
Ford	0	0	0	0	0	0	0	0	0	0	0	0
Franklin.....	3	3	5	1	1	1	0	0	0	0	0	0
Geary.....	0	0	0	0	1	0	0	0	0	0	0	0
Gove.....	0	0	0	0	0	0	0	0	0	0	0	1
Graham.....	0	0	1	0	0	0	0	0	0	0	3	1
*Grant.....	0	0	0	0	0	0	0	0	0	0	0	0
Gray	0	0	1	0	0	0	0	0	0	0	1	0
*Greeley	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood.....	1	1	0	0	0	0	0	0	10	0	9	0
Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
Harper.....	0	0	0	0	0	0	1	0	0	0	0	0
Harvey.....	0	0	0	0	0	0	0	0	17	0	8	0
Haskell	0	0	0	0	0	0	0	0	0	0	1	0
Hodgeman.....	0	0	0	0	1	0	0	0	0	0	0	0
Jackson.....	0	0	0	0	0	0	10	1	0	0	0	0
Jefferson.....	0	0	0	0	0	0	1	0	0	0	0	0
Jewell	0	0	1	0	0	0	0	0	6	0	2	0
*Johnson.....	0	0	0	0	0	0	0	0	0	0	0	1
Kearny	0	0	1	0	1	0	0	0	0	0	2	0
Kingman	1	1	0	0	0	0	0	0	1	0	8	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette.....	0	0	0	0	2	0	0	0	0	0	4	0
Lane	0	0	0	0	0	0	1	0	0	0	1	0
Leavenworth....	2	2	0	0	0	0	1	0	0	0	0	0
Lincoln	0	0	0	0	1	0	0	0	0	0	0	0
Linn	0	0	0	0	0	0	2	0	0	0	0	0
*Logan.....	0	0	0	0	0	0	0	0	0	0	0	0
Lyon.....	7	8	5	0	0	0	4	1	11	0	3	0
Marion.....	1	0	2	0	0	0	0	0	9	0	1	0
*Marshall.....	0	0	0	0	0	0	0	0	0	0	0	0
McPherson	0	0	0	0	0	0	2	0	4	0	3	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	0	0	0	0	0	0	0	0	0	0
Miami	0	0	0	0	1	0	0	0	0	0	0	0
Mitchell	0	0	0	0	0	0	4	0	0	0	0	0
Montgomery	0	0	1	0	10	0	1	0	20	1	8	0
*Morris	0	0	0	0	0	0	0	0	0	0	0	0
Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	0	0	0	0	0	0	0	0	4	0
Neosho	2	0	2	0	0	0	0	0	12	0	2	0
Ness	0	0	0	0	0	2	2	0	0	0	0	0
Norton	0	0	0	0	0	0	1	0	10	0	1	0
Osage	10	2	0	0	0	0	3	0	0	0	4	0
Osborne	0	0	0	0	0	0	2	0	0	0	0	0
Ottawa	0	0	0	0	0	0	0	0	0	0	0	0
Pawnee	0	0	1	0	0	0	1	0	0	0	0	0
*Phillips	0	0	0	0	0	0	3	0	0	0	0	0
Pottawatomie	1	0	2	0	0	0	4	0	1	0	0	0
Pratt	0	0	0	0	0	0	0	0	1	0	0	0
Rawlins	0	0	0	0	0	0	0	0	1	0	0	0
Reno	3	0	2	0	0	0	2	0	8	3	12	0
Republic	1	1	0	0	0	0	2	0	0	0	1	0
*Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	3	3	0	0	0	0	0	0	0	0	1	0
Rooks	0	0	4	1	0	0	0	0	0	0	0	0
*Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	1	0	0	0	0	0	0	0	0	0
Saline	0	0	0	0	0	0	0	0	5	0	14	1
Scott	1	1	0	0	0	0	0	0	0	0	0	0
Sedgwick	0	0	0	0	1	0	1	0	0	0	1	0
Seward	0	0	0	0	0	0	0	0	0	0	0	0
Shawnee	2	1	0	0	4	0	0	0	1	0	0	0
Sheridan	1	0	0	0	0	0	0	0	0	0	0	0
Sherman	0	0	0	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	1	0	0	0	1	0	4	1	2	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	4	4	2	1	2	0	0	0	0	0	0	0
Thomas	0	0	0	0	0	0	0	0	0	0	10	0
Trego	0	0	0	0	0	0	0	0	1	0	3	0
Wabaunsee	0	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	0	0	0	0	0	0	1	0	10	0
Washington	0	0	0	0	0	0	1	0	0	0	0	0
*Wichita	0	0	0	0	0	0	0	0	0	0	0	0
Wilson	1	1	0	0	0	0	6	0	0	0	10	1
Woodson	0	0	0	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	0	0	4	0	0	0	1	0
Cities:												
Fort Scott	3	1	0	0	1	0	0	0	0	0	10	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Coffeyville	1	1	0	0	0	0	3	0	8	0	4	1
Kansas City	12	12	16	3	9	0	13	0	23	0	11	0
Leavenworth	2	2	2	1	3	0	2	0	1	0	12	0
Parsons	2	2	0	0	0	0	1	0	2	0	14	0
Pittsburg	1	1	0	0	3	1	10	4	0	0	4	0
Topeka	3	0	0	0	15	0	4	0	0	0	2	1
Wichita	3	3	4	1	1	0	0	0	14	0	23	0
State Institutions.	182	2	0	0	0	0	0	0	0	0	0	0

* No reports.

In general, it is estimated by competent judges that under proper conditions life could be doubled in length, activity, happiness and usefulness, and existing misery, poverty and crime reduced to a minimum.

EPIDEMIC ANTERIOR POLIOMYELITIS.

Acute anterior poliomyelitis, or so-called infantile spinal paralysis, prevailed in epidemic form in Kansas during the summer of 1909. About the same time epidemics of great proportions appeared in Nebraska, Minnesota, New York and Massachusetts, with smaller ones in several other states. The disease has appeared in sporadic form at various times in this state and probably in all other states, but last year marked the first epidemic in Kansas, there being something over 100 cases so far as known.

The first cases were reported in the latter part of July and the height of the epidemic was reached in August and September, with a few cases as late as the last of November. The season was unusually hot and dry, particularly in the two counties where the largest number of cases occurred, and in which the crops were almost an entire failure because of long-continued drought. With the appearance of cold wet weather the disease ceased.

That epidemic poliomyelitis is infectious is no longer a doubt, as the most convincing proof has been shown by Wickman, Landsteiner and Popper and Flexner and Lewis in their studies of epidemics in this country and in Europe.

The specific micro-organism has not yet been found, but the so-called filterable virus has been found by Flexner and Lewis, which when inoculated into monkeys produced the disease, which in turn they transmitted through a long series of monkeys, the virus growing more virulent with such transmission.

This experimental poliomyelitis was first produced by the intracranial inoculation into monkeys of an emulsion of the cord of a child dead of the disease, which in turn was transmitted by an emulsion of the cord to a second series of monkeys. Later, the disease was produced by inoculating the virus secured from the maceration and filtration of a section of the nasopharyngeal mucous membrane and the tonsils of a monkey; and finally the disease was produced by rubbing the virus into the abraded mucous surfaces of the nasopharynx of the monkey, which seems to prove that the throat and nose is at least one of the avenues of entrance as well as exit of the infectious agent.

Landsteiner has ascertained that the salivary glands are sometimes infectious, and Leiner and Wiesner found that the virus when introduced into the stomach by means of a catheter, or in-

jected into the small intestine, peristalsis being controlled by opium, sufficed to cause paralysis.

Flexner and Lewis have shown that the virus withstands desiccation, glycerinization and freezing, but is quite readily destroyed by heat.

SYMPTOMATOLOGY AND COURSE.

For purposes of convenience in describing the clinical course of the disease the following arbitrary divisions may be made:

1. The abortive poliomyelitis.
2. The poliomyelitis of moderate severity (usually resulting in a monoplegia, or possibly a group of muscles being paralyzed).
3. The acute ascending poliomyelitis of severe type.
4. The bulbar poliomyelitis.
5. Encephalic type.

Abortive poliomyelitis occurring sporadically, or in the practice of a physician not familiar with the condition, though it is during an epidemic, may not be diagnosed. During epidemics they are frequently found, and are mentioned in all the later reports in considerable number.

In this type the patient has a fever of moderate degree, is restless, anxious, possibly has some bowel troubles, and has headache, neckache and backache, with pains down the legs. There may be muscular twitchings and sensitiveness when handled. After three or four days these symptoms subside, and then it is noticed that the patient is disinclined to use the legs, and if old enough complains of muscular weakness and fatigue out of all proportion to the duration and severity of the illness. No actual paralysis develops. In a week or two there is complete recovery.

In the ordinary cases where paralysis does occur the prodromal symptoms are the same, excepting that they are probably more severe. There may be muscular rigidity in the neck, and retraction of the head. The temperature runs up to 101° or 103° F. There may be vomiting, sweating, prostration, restlessness, and severe pains in the back and extremities. There may be an inability to empty the bladder and to control the bowels. This continues three or four days, when paralysis occurs, though it may be unnoticed until later because of the severity of the other symptoms. The affected extremities are flaccid and tend to get cold and cyanosed. The paralysis may be limited to one group of muscles, or to one extremity, or may involve the trunk or upper extremities. It reaches its maximum in a few hours to three or four days. In a week or ten days after the paralysis occurs the patient begins to

improve until only a comparatively small amount of the original paralysis remains permanent. Recovery may be complete even in severe cases, especially in the epidemics. The control of the bladder and rectum, when lost, is usually regained in nine or ten days, and the trunk muscles usually recover.

At one end of this group we have the very light cases, which show only a little peevishness or some slight indisposition before the paralysis is noticed. The patient may not be brought to the attention of a doctor at all until a helpless limb alarms the parents. This mild type is more often found in the sporadic occurrence of the disease than in the epidemic form.

The acute ascending poliomyelitis is exactly like that described above, excepting that the lower extremities, bladder and rectum, abdomen, back, chest, upper extremities, throat, etc., are involved in order until, as the medulla is attacked, respiratory paralysis ends the distressing scene.

In the bulbar poliomyelitis the symptoms, outside of the paralysis, are much the same; the motor nuclei of this region being first involved, the paralysis affects the throat, eyes, face, tongue, etc. There are found all the varieties of strabismus, apparent Bell's palsy, difficulty in phonation, deglutition, choking and related symptoms. The paralysis may pass downward and respiratory failure occur, as in the ascending type. Recovery may be partial or complete, as in the other forms.

If death does not occur after the acute stage has passed, there is a period of quiescence for two weeks or a month, then a rapid improvement follows, which becomes slower after three months, although some slight additional improvement may be expected up to two years.

The following case report fairly illustrates a typical case of the disease:

"F. E., male, age 3, family history good; three living children. Onset of illness September 16, 1909. First symptoms were conjunctivitis (unusual symptom), left more than right. Much lachrymation of left eye. Sleep good. Bowels moved on the previous day. On the 17th conjunctivitis same. Complained of light. Irritable and cross. Cried much. Afraid of being alone. Appetite good. In the evening there was evidence of fever. On the 18th eyes were improving. Vomited in the evening. There were abdominal pains, chiefly below the umbilicus. No bowel movement. Had a frontal and occipital headache in the morning. Neck stiff. Much fever. Face flushed. Was walking in the morning. In the evening could not stand alone. Could not lift feet. The degree of paralysis was greatest in the right leg. On the 19th there was pos-

sibly less fever. Felt better. Standing, playing and joking with other children. Constipated. Appetite improved. Could move left leg at hip, knee and ankle. On the right side could move toes only.

"On the 20th was first seen by physician. Had temperature of 101° F. Pulse 110. Pain over right hip. Bowels moved. On the 21st had apparently no temperature. Had pains in the right leg and paresthesias—"fly crawling on my knee; mites on toes; scratch my nose." Both toes were moved voluntarily. Had some difficulty in initiating micturition and defecation. Complained of pain when the legs were moved.

"On 23d, examination by Dr. A. L. Skoog showed a well-nourished boy. Heart and lungs normal. Pulse 106 and arteries full. Respiration normal. Some tympany. Was hypersensitive to touch, especially below the umbilicus. All cranial nerves normal. Muscles of the upper extremities normal. Abdominal muscles at ninth dorsal segment showed some weakness. Below ninth segment much weakness. Slight power of movement of left leg at hip, knee and ankle joints, and more of toes. Deep reflexes. All upper extremities normal. Epigastric present, right equals left. No abdominals or cremasterics. No patellar or Achilles. Plantars flexor in type. All forms of sensation normal. Neck rigid. Movements of lower trunk cause pain. Unable to walk or sit.

"Examination on July 9, 1910, about ten months from onset of illness. Boy has grown much. Suffers severely from constipation. Cannot stand alone or walk. Crawls much. Walks on all fours fairly well. Left leg has fair power at hip and knee, and ankle slightly diminished. In right leg slight movement at hip, none at knee or ankle, considerable in toes to flexion but none to extension. Reflexes are brisk at epigastrium, sluggish below umbilicus. No cremasterics on either side. Left patellar and Achilles normal, right absent. Circumferences: Left calf 8½ in., right, 7¾. Left thigh (minimum) 8¾, right 8¾. Left thigh (maximum) 11½, right, 11. Left leg muscles normal to electrical stimuli. Right sural and anterior tibial groups give no reaction to galvanism or faradism. Slight reaction to faradism of thigh adductors, but none of knee extensors." (See Fig. 4.)

EXPOSURE TO INFECTION.

In only nine families in the Kansas epidemic were there more than one case in the family, although every family but 8 had more than one child in the family, out of 58 families whose history is given in this regard. In these 58 families there were 199 children and 72 cases of the disease; in only two cases outside of the families where there was more than one case in the family was there a history of a probable exposure to another case.

INCUBATION PERIOD.

In the experimental disease with monkeys, Flexner has shown that the incubation period is variable, ranging from four days to thirty-three days, the average period being 9.82 days, counting from the time of inoculation until the beginning paralysis.

IMMUNITY.

Experiments by Flexner and Lewis seem to indicate that one attack establishes immunity from subsequent attacks. They have also established immunity by gradual increasing injections of the virus.

MORTALITY.

The mortality of the experimental disease in monkeys is very high. In 81 cases of Flexner and Lewis the mortality was 54.3. In the human the mortality has averaged from 10 to 15 per cent. In the 61 case reports in the Kansas Epidemic of 1909 on file in this office, there were 18 deaths, which makes a rate of 29.5. This is an unusually high rate, but there can be scarcely any doubt but that many of the milder or abortive types remained unrecognized or were not reported.

DISTRIBUTION OF PARALYSIS.

No abortive cases are recorded in Kansas cases. The distribution of paralysis occurred in the following frequency :

	<i>Cases.</i>
Both legs.....	12
Both legs and arms.....	19
Both legs and right arm.....	2
One leg, not stated which	1
Right leg.....	5
Left arm.....	2
All four extremities, arms first.....	1
All four extremities, arms partial	1
Both legs and left arm.	2
Left leg.. ..	3
Only respiratory muscles	1
Both arms	1
Left deltoid intercostals and diaphragm.....	1
Throat and vocal cords	1
Left arm and right leg	4
Left arm and other three extremities slightly.....	1

RELATION OF BEGINNING PARALYSIS TO BEGINNING OF FEVER.

The preponderating number of cases developed beginning paralysis on the second and third days, as shown in the following table :

First day	4 cases.	Sixth day.....	2 cases.
Second day.....	20 “	Seventh day	1 “
Third day	19 “	Tenth day.....	1 “
Fourth day	7 “	Twelfth day.....	1 “
Fifth day	1 “	Not known	2 “

PRECEDING ILLNESS.

All the cases in the Kansas epidemic had been in good health previous to the attack, except in three cases; two had been suffering from diarrhea for some time, and one had never been robust and strong.

SEX.

Of the 57 cases of which we have case records, 35 were males and 22 females.

TOWN AND COUNTRY.

Of the above number 27 lived in town or city and 30 lived on farm in country.

AGE.

The following table shows the number at various ages, the greater number recorded being at or near 3 years of age:

	Cases.		Cases.
6 months.....	2	3½ years.....	1
8 “	2	4 “	2
9 “	2	5 “	3
10 “	1	6 “	5
12 “	1	7 “	2
13½ “	1	8 “	3
16 “	2	11 “	2
18 “	1	12 “	1
20 “	2	13 “	1
21 “	1	20 “	1
2 years.....	6	21 “	1
2½ “	2	31 “	1
3 “	11	45 (or 47) years.....	1

RECOVERY.

But 10 cases have thus far been carefully studied after ten months. Of this number there were 3 complete recoveries, 5 partial recoveries, and 2 in which there was but slight improvement since attack. This number is too small from which to draw conclusions, although the average is not far from the results noted by the Mas-

sachusetts State Board of Health in their study of 58 cases, which is as follows:

"Excluding the 6 abortive cases, 58 cases were examined in this regard about nine months after the illness. Six cases appeared to have completely recovered from the paralysis. Six others appeared to have recovered, but of these 5 were infants and could not be satisfactorily examined, while the other was sick at the time of examination. These 6 cases were classed as apparent recoveries. Forty-two cases had partially recovered from paralysis, while 4 cases had shown but very slight improvement since the attack."

SOURCE OF WATER SUPPLY.

The source of water supply in 23 families out of 61 recorded sources of supplies is that of a drove or drilled well, 3 city water, 5 cistern, and 30 open dug wells.

SCREENS.

Out of 61 families, 54 houses were screened, and 7 with poor or no screens. It was noted, however, that in most houses there were a considerable number of flies.

PRIVIES.

Of the 61 houses, there were 46 open vaults or no vaults, 13 not open and 2 unknown.

SANITARY CONDITIONS.

In 37 of the 61 families reported, the sanitary conditions were denominated good, in 11 fair, and in 13 bad.

PATHOLOGY.

I quote from the report of Dr. A. L. Skoog, on pathology, who performed most of the experimental work for the State Board of Health during and following the epidemic:

"Although one of the most definite and clearest of all the special neurological infective diseases in a morbid anatomical sense, there are many essential facts not yet clearly grasped by the profession in general. The most frequent error is to look upon the disease as essentially or entirely confining its tissue changes to the anterior gray substance of the spinal cord or more definitely to its motor cells.

"It is certain that no portion of the central nervous system is exempt from pathological tissue changes. The involvement of cerebral and cerebellar cortical areas is evidenced by a number of clinical manifestations observed during the state epidemic of 1909. No such case came to autopsy. The literature, especially Scandinavian and German, shows a number of autopsied cases demonstrating changes in the higher central nervous system.

"The motor cranial nerves have their analogue of spinal anterior

horn motor cells in their respective nuclear centers. Some of the pathological reports have shown a severe infiltration in and immediately about the nuclear centers of the third, fourth, seventh and twelfth cranial nerves without many of the large motor cells having any evidence of chromatolytic alterations. On the other hand, some cases have had nuclear centers more or less destroyed, unilateral or bilateral. That the mesencephalon, pons and medulla are severely involved in some cases is evidenced in a clinical way by the sudden nuclear palsies, more often unilateral, of the motor oculi, abducens, facial and hypoglossal nerves whose nuclear centers are located in those regions of the encephalon.

"An illustrative case of a special involvement of the medulla is one observed by Doctor Kenney, of Norcatur, Kan. The patient, a man aged thirty-one, had a typical onset of poliomyelitis with a rapidly progressive paralysis of all the extremities. There developed on the third and fourth days respiratory difficulties of a nuclear type, dysphagia, and singultus.

"I examined a case under the care of Doctor Dallal, of Norcatur, Kan., two weeks after an almost typical onset of the acute period of poliomyelitis acuta, whose examination showed a single pontine paralytic lesion. The girl, aged twenty-three months, had a paralysis of both legs, right much greater than the left, a severe paralysis of the left arm and slight of the right, and a marked left facial palsy of a nuclear type. All the facial muscles of the left side had very feeble power of motion. The right was normal. Here we could look for a severe lesion of the left seventh cranial nerve nuclear center in the pons.

"For a pathological study of the typical lesions we turn to the spinal cord, where the bulk of the damage is limited to a few segments, more often unilateral.

"The dura is seldom involved. The arachnoid and pia show changes in all the cases dying during the acute stage. We have reason to believe that all the cases have at least a mild oedema and leucocytic infiltration of the delicate and highly vascular inner cord membranes. We have examined the cerebrospinal fluid obtained by the Quinke puncture from several cases, all of which showed a decided increase in the lymphocytes, chiefly small.

"For the count a centrifuged specimen is stained, and examined with a $\frac{1}{6}$ B. & L. objective, and register made of the number per field. One case (T. H.) gave a count of 40 lymphocytes per field, no polymorphonuclears. The fluid was under increased pressure, perfectly clear, and contained no flocculi. Albumen slightly increased. A lumbar puncture was performed on case (O. H.) on the sixth day of the acute state of her illness, which was an unusually prolonged one. The fluid was under slight plus pressure but absolutely clear. It was used for animal inoculations. A second puncture, done for therapeutic purposes five days later, demonstrated fluid under normal pressure and again clear. The count gave 18 lymphocytes and 0.5 polymorphonuclears per field. Two cases had cerebrospinal fluid with a marked coagulability.

"Further support for meningeal involvement is furnished by frequent clinical observations of symptoms having their source of origin in the inner meninges.

"The white columns in some of the autopsied cases show the infiltration especially marked in the perivascular lymph spaces and neighborhood. The primary changes, or changes occurring in uncomplicated cases, are thus of a vascular nature.

"In the gray matter are to be found the greatest tissue changes, where it is quite general in distribution with the specially characteristic lesions in the anterior horns with varying degrees of motor ganglion cell degenerations up to a complete destruction of these elements.

"There is an early chromatolysis of the tigroid bodies of the motor cells in the anterior horns. No stain demonstrates this better than the Nissl stain. In the normal cell the Nissl bodies are quite evenly distributed throughout the protoplasm and extending far out into the protoplasmic process but never in the axon. In the milder degenerations the tigroid bodies arrange themselves in thicker groups about the nucleus or in the periphery of the cell. The protoplasm may show no tigroid bodies, appearing to be a homogeneous mass. Mere traces of cells are often found, or there may be an appearance as if pieces of the cell had been excised. The nucleus with nucleolus is often displaced toward the periphery or may be entirely absent. Pigment granules are occasionally found in the pathological cells. Vacuoles are infrequently seen. Axonal degeneration is usually present, in which cells are frequently seen without any processes given off.

"The posterior horn cells are not exempt from acute degenerations, but are infrequently sufficiently affected to give rise to altered functions. I have one pathological specimen from among the two autopsied cases which came into my possession during the last Kansas epidemic, which shows Clark's column almost absent on one side, while on the other the cells are quite numerous, many of them accepting tinction quite well. The patient (S. T. P.), a girl aged eight, after an illness of five days with a progressive severe attack of clinically diagnosed poliomyelitis acuta died from respiratory failure. She had an ascending type of paralysis. An autopsy was performed and a portion of the cord sent to my laboratory. The anterior horn cells were almost completely destroyed on both sides. The infiltration with mononuclear, polynuclear and fatty granular cells was evident everywhere. This was most pronounced in the anterior horns, where there was a great accumulation of infiltrating cells in the perivascular lymph spaces and immediately surrounding. The vessel walls were infiltrated. The white substance was moderately infiltrated, and the pia arachnoid in a mild degree. Appended are microphotographs of this specimen, stained by the toluidine blue modification of the Nissl stain.

"Case: F. G., female, age thirteen, entered the University of Kansas Hospital at Rosedale in the sixth day of her illness. The onset was marked with pain in the left lumbar and gluteal region,

which extended to both legs on the following day. Much headache. No vomiting. Constipated. Retention of urine began on the fourth day, lasted for three weeks, and was followed by a permanent incontinence. No knowledge of bowel movements. Pyrexia of 100° to 104° F. and reaching 106° for one day two weeks after the onset. Pulse and respiration rate correspondingly increased. Motor paralysis of all the skeletal muscles from the waist down began suddenly at one A. M. on the fourth day of the illness and was complete in two hours. There was an entire loss of all forms of sensation below the area supplied by the seventh thoracic root segment. Plantar extensor response first appeared at the end of the third week, left more marked than right. All other lower extremity reflexes, abdominal and epigastric, were abolished. The motor paralysis was of the characteristic flaccid type with an early developing atrophy. No motor paralysis above the lower thorax. A study of the urine and the stools gave nothing of diagnostic value. The blood showed on the seventh day a leucocytosis of 32,100. Differential count: Polymorphonuclears, 88.5 per cent; large lymphocytes, 4 per cent; small lymphocytes, 1.5 per cent, and transitional, 5 per cent. One month later the leucocyte count was 12,200; polymorphonuclears, 76 per cent; large lymphocytes, 5 per cent; small lymphocytes, 3 per cent. Interesting and valuable results were obtained from a study of the cerebrospinal fluid. Ten drops of the fluid were removed by a lumbar puncture on the sixth day of the illness. More could not be obtained on account of the small quantity present, and the physical characteristics. The fluid came drop by drop, and coagulated as soon as reaching the outer opening of the needle. It was absolutely clear. Animal inoculations with this fluid were negative. On the tenth day of the illness punctures at the second, third, fourth and fifth lumbar spaces gave no fluid. A diagnosis of obliteration of the arachnoidal space from the seventh thoracic segment down was made. The patient became continuously more emaciated, developed numerous enormous trophic sores over sacrum, trochanters and lower extremities, and died at the end of the fourth month of her illness.

"The autopsy revealed no changes in the organs outside of the central nervous system other than those usually found in states of great emaciation. The sacral sore was in communication with the coccygeal and sacral dura, which gave a staphylococcus aureus culture. No microscopical sections could be prepared from the conus, which was cheesy in appearance. The inner meninges were closely adherent to the dura mater from the seventh thoracic segment to the first lumbar, completely obliterating all communication for fluid from the encephalon and cord above. The dura was thickened in this region. The microscopic appearance was normal above the seventh thoracic segment. The characteristic vascular infiltration could not be observed in this case on account of death occurring at a late stage of the illness. Columnar areas of softening in several segments were present, leaving large-sized holes, whose diameter in some reached two or three millimeters. These were probably

caused by a local interference with the blood supply. The anterior horn motor cells were completely destroyed in many segments below the seventh thoracic. In other segments various forms and degrees of chromatolysis among some normal cells were seen. Many of the appended microphotographs are from this case.

"The relative distribution of infiltration about the blood vessels has been considered. It often happens that a vessel becomes occluded with a thrombus or the lumen much narrowed. Small hemorrhages into the myelin substance do occur. Goldscheider has pointed out that the lesion is primarily a vascular one. Many investigators to-day agree with him. Redlich believes the nerve elements and vascular system are simultaneously involved.

"Our studies of urine and feces have given no results carrying any value.

"Blood analyses have shown a moderate leucocytosis. The differential count in our cases during the first week has given a marked diminution of the small and large mononuclears, and a decided increase in the polymorphonuclears. This becomes reversed a week or two later. Doctor Trimble, assistant professor of pathology in the University of Kansas, informs me of similar blood findings in German measles.

"It seems that investigations of the cerebrospinal fluid offer much hope for increasing our diagnostic skill and discovering the true etiology. I have made lumbar punctures on seven cases during the past year. The fluid in most instances was used to inoculate animals, thereby leaving none for microscopic or chemical examinations. The fluid was perfectly clear in each instance. The power of coagulation was increased in two, one very markedly. The cell count was increased in the three in which a count of the smear from the sedimented fluid was made. None or few polymorphonuclear neutrophils were found. The increase was confined almost exclusively to the lymphocytes. The counts, using a one-sixth objective and one-inch ocular, were 10, 14, and 60, respectively, the latter a moribund case.

"I have had autopsy material from two cases under unfavorable conditions for inoculations. Most of the investigative work has dealt with the cerebrospinal fluid and blood from clinical cases. All the inoculations were negative to the production of the disease in the lower animals. Following is an outline of the inoculations which were made:

"Macacus monkey No. I:

- | | | |
|------------------------------------------|---|--------------------|
| (1) Extract from autopsied cord. Case P. | } | Intraperitoneally. |
| (2) Cerebrospinal fluid. Case C. | | |
| (3) Cerebrospinal fluid. Case W. | | |
| (4) Cerebrospinal fluid. Case J H. | | |

"Macacus monkey No. II:

- | | | |
|------------------------------------|---|--------------------|
| (1) Autopsy blood. Case P. | } | Intraperitoneally. |
| (2) Cerebrospinal fluid. Case S. | | |
| (3) Venesection blood. Case G. | | |
| (4) Cerebrospinal fluid. Case O H. | | |

"Macacus monkey No. III:

- | | |
|------------------------------------|-----------------------------------------------------|
| (1) Cerebro spinal fluid. Case H. | { Spinal canal, 1 cc.
Intraperitoneally, 1.5 cc. |
| (2) Cerebrospinal fluid. Case O H. | { Inoculation into spinal
canal. |

"Four guinea pigs inoculated intraperitoneally with extract from an autopsied cord, with post-mortem blood and cerebrospinal fluids. Four rabbits inoculated intraperitoneally with venesection blood and cerebrospinal fluid. Two chickens inoculated with post-mortem blood."

Are We to Have Another Epidemic?

At a special meeting of the State Board of Health, held in the office of the secretary July 23, 1910, the following statement was adopted and ordered to be made public:

STATEMENT.

The State Board of Health believe that in the interest of public health and safety the following statement should be made: There has been reported to the State Department of Health, to date, 29 cases of anterior poliomyelitis (commonly called infantile paralysis), with 9 deaths. No doubt there are an unknown number of other cases not reported, or unrecognized because of their mildness. Last year there were approximately 100 cases in the state, although at this time there were not as many cases reported as we have now; this would seem to indicate the need of special vigilance and care of both physicians and parents, to the end that further progress of the disease may be stayed; therefore, we urgently request that physicians promptly report all cases to the local board of health as soon as discovered, as required by law, so that effective isolation be established, and the public health be safeguarded. In a letter just received from Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, under date of July 19, he expresses the belief that rigid quarantine measures will do much toward the control of the disease. Unless the Board have the active coöperation of the physicians, these means of control will be ineffective; this is no time for quibbling or for academic discussions, but rather of hearty coöperation against a common enemy. To the people the following suggestions are offered:

First.—To watch the diet, giving only reasonable quantities of wholesome, nutritious food, especially avoiding anything likely to upset the stomach, poor milk, unripe fruit or vegetables, if they have been exposed to dust.

Second.—To watch exercise, preventing any excessive effort or fatigue, even at play, particularly in the sun and in hot weather.

Third.—To watch the bowels, avoiding constipating foods, or sluggishness of the bowels from any cause. Secure by treatment, if need be, free daily evacuations.

Fourth.—To watch the children's playmates and to avoid even distant association with other children sick with this disease or with anything re-

sembling it; or with members, including adults, of families in which the disease exists.

Fifth.—To watch the sick children themselves. Confine them to their own premises; destroy or disinfect the discharges of the throat, nose, bladder and bowels; prevent their association with any one but an attendant who does nothing but care for them; in the case of death, allow a private funeral only.

Sixth.—In the event of any child showing symptoms which are usual to the beginning of an attack of poliomyelitis (fever, headache, pain, constipation, vomiting), remember that, while these symptoms may mean nothing but a passing disturbance, they may be the first stages of poliomyelitis; call a physician at once, and meantime keep the child quiet. If the child seems to recover almost wholly in two to four days, do not remit watchfulness, for in poliomyelitis the initial symptoms, after lasting two or four days, often disappear for a day or two, to be followed than by a return of the symptoms and paralysis.

Seventh.—We are still far from knowing all that we should of poliomyelitis, although we have learned a great deal since last year. The study of the internal organs of patients who have died of the disease is essential to further progress. It should be regarded as the duty of all good citizens to allow such studies to be made in case of death. All we know in this state of the pathology of the disease is due to the broad sympathy of sorrowing parents who allow scientific examination of their children dead of the disease. Only two such noble examples were found last year, and to those parents the rest of the community owe a great debt of gratitude. That other parents should be found willing to emulate them is necessary for further progress in our knowledge and ability to cope with the disease.

CLAY E. COBURN, M. D., *President.*

S. J. CRUMBINE, M. D., *Secretary.*

At the time of going to press the following cases have been reported by counties:

	<i>Cases.</i>	<i>Deaths.</i>		<i>Cases.</i>	<i>Deaths.</i>
Brown.....	4	1	Nemaha.....	1	..
Chautauqua.....	2	1	Phillips.....	4	2
Cherokee.....	1	..	Pottawatomie.....	2	..
Cloud.....	1	..	Reno.....	2	..
Decatur.....	2	1	Riley.....	6	2
Douglas.....	6	2	Republic.....	1	1
Gove.....	1	1	Shawnee.....	7	2
Kingman.....	1	1	Wabaunsee.....	1	..
McPherson.....	5	1			
			Totals.....	47	15

MICROPHOTOGRAPHS, SECTION OF CORD OF A CASE OF ANTERIOR POLIOMYELITIS.

NOTE.—We are under obligations to Dr. RICHARD L. SUTTON for photographic work.

PLATE I.

Poliomyelitis acuta, $\frac{1}{4}$ objective. Toluidin blue stain. IX thoracic segment spinal cord. Clark's column of nerve cells lateral and posterior to canalis centralis, showing almost normal number of cells (30). Cells show slight chromatolysis, moderate leucocytic infiltration.

PLATE II.

Poliomyelitis acuta, $\frac{1}{4}$ objective. IX thoracic segment spinal cord. Toluidin blue stain. (Compare I, same slide.) Clark's column of nerve cells has almost entirely disappeared; three cells and few fragments remaining. Severe lymphocytic and fatty granular cell infiltration.

PLATE III.

Poliomyelitis acuta, $\frac{1}{2}$ objective. I S. Segment spinal cord. Nissl stain. Four motor cells shown and a fragment of a fifth. Marked chromatolysis, destruction of protoplasmic processes, and eccentric displacement of nucleus.

PLATE IV.

Poliomyelitis acuta, $\frac{1}{2}$ objective. Motor cells, anterior horn. Nissl stain. Marked chromatolysis. Destruction of protoplasmic processes. One cell showing nucleus, around which are arranged the remaining tigroid bodies.

PLATE V.

Poliomyelitis acuta, $\frac{1}{2}$ objective. II L. Segment spinal cord. Nissl stain. Three motor cells in line, of which first and third show vacuoles.

PLATE VI.

Poliomyelitis acuta, $\frac{1}{4}$ objective. VII Thoracic segment spinal cord. Nissl stain. Almost all motor cells or anterior horn have been destroyed. Marked infiltration of anterior horn gray substance and about arteria commissuralis anterior.

PLATE VII.

Poliomyelitis acuta, $\frac{1}{4}$ objective. Spinal cord. Carmine stain. Pial infiltration. Note marked infiltration of blood vessel passing from pia into white substance.

PLATE VIII.

Poliomyelitis acuta, complicated with a transverse meningomyelitis, $\frac{1}{4}$ objective. Van Gieson stain. VIII thoracic segment spinal cord. (1) Fatty areolar tissue between dura and vertebra; (2) dura thickened, (3) arachnoid, and (4) pia, thickened and infiltrated (2, 3 and 4 closely adherent); (5) white substance.

PLATE IX.

Nissl stain, $\frac{1}{8}$ objective. 1" Oc. Normal anterior horn motor cells.

PLATE X.

Nissl stain, $\frac{1}{12}$ objective, immersion oil. Normal anterior horn motor cells. Tigroid bodies extending far out into a protoplasmic process of a motor nerve cell. Tigroid bodies evenly distributed in the cell, and nucleus having a central location.

PLATE I.

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PLATE VII.

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PLATE IV.

PLATE V.

PLATE VI

PLATE VII.

PLATE VIII.

PLATE IX.

PLATE X.

**PHOTOGRAPHS OF CASES TEN MONTHS AFTER
ATTACK, ANTERIOR POLIOMYELITIS.**

PLATE XI.

(See next page.)

FIG. 1. L. B. Boy, age 5. Poliomyelitis acuta, September, 1909. Remaining palsy severe of left upper extremity. High degree of muscular atrophy of left scapular, shoulder and arm groups; no function.

FIG. 2. P. P. Age 5. Poliomyelitis acuta, August 14, 1909. Lesion of left spinal cord from XI dorsal segment down, right from X dorsal segment down. Remaining paralysis, slight weakness of left knee extensors and flexors. Left ankle flexion one-third power, extension *nil* atrophy.

FIG. 3. D. L. S. Boy, age 3. Poliomyelitis acuta, in September, 1909. Lower extremities involved, R. & L. Remaining palsy moderate. Gait impaired.

FIG. 4. F. E. Boy, age 4. Poliomyelitis acuta, September 16, 1909. Motor cell lesion of spinal cord from X dorsal segment, right and left, down. Residual paralysis almost entirely to right lower extremity. No right knee or ankle movements. Marked atrophy. Moves about "on all fours."

FIG. 5. L. N. Boy, age 3. Poliomyelitis acuta, in August, 1909. Right arm and both legs involved. Severe residual palsy of lower extremities. Cannot walk. Great muscular atrophy of buttock and leg muscles, concealed by much subcutaneous fat.

PLATE XI.

For the Outing.

What are we going to take along?
Just a joke and a gay salute,
Rod and gun and a bathing suit,
Clothes, a gridiron, lot of pans,
Smiling eyes and a joyous song—
These are the things to take along.

What are we going to leave behind?
Niminy-piminy nerves and nags,
Lace-y lingerie, "vanity bags."
Stiltlike heels and corset steels
And hats like crazy wagon wheels,
Tongues that bite and cares that grind,
These are things we leave behind.

—Outer's Book.

BULLETIN

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 8.

AUGUST, 1910.

VOL. VI.

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Keep your head cool and your heart warm.

The typhoid fly has not learned to wipe his feet.

It is greater to be a man than a mountain.—*Estey*.

The baby is not only entitled to a square meal, but also to a square deal.

One-fifth of the deaths in the United States are infants less than one year old.

The BULLETIN will be regularly sent to any citizen of Kansas upon request.

Do you think a dollar fine enough for the man who adds doubtful water to the milk you buy for the baby?

Why not give the baby as good a start in the world as the pedigreed dog—and register the sweet little dear?

The person who adulterates milk by the addition of water is not usually very particular as to the kind or quality of the water added.

Everybody who believes in the square deal for the baby should interview their representatives in the legislature in the interest of the vital statistics bill.

VITAL STATISTICS

Reported to the Kansas Board of Health for July, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State...total, July, 1909.	247 823	40 70	127 161	24 30	35 42	6 5	43 27	1 4	43 29	0 0	146 22	3 3
Allen	2	1	10	0	0	0	1	0	1	0	0	0
Anderson	1	1	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	1	0	0	0	0	0	0	0
*Barber	1	1	2	0	0	0	10	0	1	0	0	0
Barton	0	0	0	0	0	0	0	0	0	0	0	0
Bourbon	0	0	0	0	0	0	0	0	0	0	0	0
Brown	2	2	1	1	0	0	0	0	0	0	1	1
Butler	0	0	0	0	0	0	1	0	0	0	0	0
Chase	0	0	0	0	2	0	0	0	0	0	0	0
Chautauqua	3	1	2	1	0	0	0	0	0	0	0	0
Cherokee	1	1	0	0	0	0	0	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	0	0	0	0	6	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	1	0	0	0
Cloud	0	0	3	1	0	0	0	0	0	0	1	0
Coffey	0	0	1	0	1	0	0	0	1	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	2	2	0	0	4	1	0	0	1	0	0	0
Crawford	1	1	1	1	2	0	1	0	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	4	0	0	0
*Dickinson	0	0	0	0	0	0	0	0	0	0	0	0
Doniphan	0	0	0	0	1	1	1	0	0	0	0	0
Douglas	2	2	0	0	0	0	1	0	0	0	0	0
Edwards	0	0	3	0	0	0	1	0	0	0	0	0
Elk	3	2	1	0	0	0	0	0	2	0	0	0
Ellis	0	0	0	0	0	0	0	0	3	0	0	0
Ellsworth	0	0	1	0	0	0	0	0	0	0	6	0
*Finney	1	1	7	1	0	0	0	0	0	0	3	0
Ford	1	1	5	0	7	2	0	0	0	0	0	0
Franklin	1	0	2	2	0	0	0	0	0	0	1	0
Geary	0	0	2	1	1	0	0	0	0	0	3	0
Gove	0	0	0	0	0	0	0	0	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0
*Grant	0	0	2	0	0	0	0	0	0	0	0	0
Gray	0	0	0	0	0	0	0	0	0	0	0	0
*Greeley	0	0	1	1	1	0	0	0	0	0	9	0
Greenwood	0	0	3	0	0	0	0	0	0	0	0	0
Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
Harper	0	0	1	1	0	0	1	0	0	0	3	0
Harvey	0	0	0	0	0	0	0	0	0	0	11	0
Haskell	0	0	0	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	1	0	0	0	0	0	1	0	0	0
Jackson	0	0	1	0	0	0	0	0	0	0	0	0
Jefferson	1	0	1	0	1	0	1	0	0	0	0	0
*Jewell	0	0	0	0	0	0	0	0	0	0	0	0
*Johnson	0	0	1	0	0	0	0	0	0	0	0	0
Kearny	0	0	0	0	0	0	0	0	0	0	0	0
Kingman	0	0	0	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	2	0	0	0	0	0	0	0	0	0
Lane	0	0	0	0	0	0	2	0	0	0	0	0
Leavenworth	2	2	0	0	1	0	2	0	0	0	0	0
Lincoln	0	0	0	0	1	0	0	0	0	0	4	0
Linn	0	0	1	0	0	0	0	0	0	0	0	0
Logan	0	0	1	0	0	0	0	0	0	0	0	0
*Lyon	1	0	2	0	0	0	0	0	1	0	0	0
Marion	1	1	3	0	0	0	7	0	0	0	0	0
Marshall	0	0	3	0	0	0	0	0	0	0	0	0
McPherson	0	0	3	0	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	1	0	0	0	0	0	0	0	0	0
Miami	0	0	1	0	0	0	0	0	0	0	0	0
Mitchell	2	1	1	0	0	0	0	0	0	0	0	0
Montgomery	0	0	3	1	2	0	1	0	2	0	7	0
* Morris	0	0	0	0	0	0	0	0	0	0	0	0
Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	0	0	0	0	0	0	2	0	27	0
Neosho	0	0	6	8	1	0	0	0	11	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	1	0	0	0	0	0	0	0	0	0
Osage	11	2	2	0	0	0	0	0	0	0	7	0
Osborne	0	0	4	0	1	0	8	0	0	0	0	0
Ottawa	0	0	8	0	0	0	0	0	0	0	0	0
* Pawnee	0	0	0	0	0	0	0	0	0	0	0	0
* Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	0	0	0	0	0	0
Pratt	1	0	4	0	0	0	0	0	1	0	20	1
* Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
* Reno	0	0	1	0	0	0	0	0	0	0	0	0
Republic	0	0	1	0	0	0	0	0	0	0	0	0
Rice	1	1	5	0	0	0	0	0	0	0	0	0
Riley	1	0	0	0	0	0	0	0	0	0	3	0
Rooks	0	0	0	0	0	0	0	0	0	0	0	0
* Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	0	0	0	0	0	0	0	0	0	0
Saline	0	0	0	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	1	0	0	0	0	0
Sedgwick	1	1	0	0	0	0	0	0	0	0	0	0
Seward	0	0	1	1	0	0	0	0	0	0	0	0
Shawnee	8	1	0	0	0	0	0	0	0	0	0	0
Sheridan	0	0	0	0	0	0	0	0	0	0	4	0
Sherman	0	0	0	0	0	0	0	0	0	0	1	0
Smith	0	0	2	0	0	0	0	0	0	0	0	0
Stafford	2	0	1	0	0	0	0	0	2	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
* Sumner	0	0	0	0	0	0	0	0	0	0	0	0
Thomas	0	0	2	0	0	0	0	0	0	0	6	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	0	0	0	0	0	0	0	0	8	0
Washington	0	0	0	0	0	0	1	0	0	0	0	0
* Wichita	0	0	0	0	1	1	5	1	0	0	6	0
Wilson	0	0	0	0	0	0	0	0	0	0	0	0
Woodson	0	0	3	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	0	0	0	0	0	0	0	0
Cities:												
Fort Scott	1	1	1	0	0	0	0	0	0	0	1	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
Coffeyville	5	2	7	2	0	0	0	0	0	0	0	0
* Kansas City	0	0	0	0	0	0	0	0	0	0	0	0
* Leavenworth	0	0	0	0	0	0	0	0	0	0	0	0
Parsons	0	0	0	0	0	0	0	0	1	0	8	0
Pittsburg	1	1	1	1	0	0	1	0	0	0	0	0
Topeka	6	6	3	8	7	1	3	0	7	0	0	0
Wichita	2	2	6	3	0	0	0	0	8	0	5	1
State Institutions,	182	2	2	0	0	0	0	0	0	0	0	0

* No reports.

Doctor Dixon declares that the free distribution of diphtheria antitoxin in Pennsylvania has saved the lives of 8000 children of that state.

FOOD ANALYSES No. XXX.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

"BUTTERO."**"The Wonderful New Butter Emulsifying Secret."**

No. 3252A. That there is nothing new under the sun is exemplified by this wonderful (?) product. It contains water, 15.41 per cent of common salt, and 11.14 per cent of starch, and an ounce bottle of it has printed at the bottom, "Price, 30 cents." With starch at the price of, say, three cents a pound and salt at two cents a pound, there would seem to be considerable profit in selling this mixture at thirty cents an ounce. On a circular advertising this product, one reads: "'Buttero' is a wonderful but perfectly harmless liquid—principally vegetable—which will cause one pound of pure butter to absorb approximately one pound of water in a few minutes. The result will be two pounds of emulsified butter (most digestible and delicious). 'Buttero' is not only a great saving, but users claim that it improves ordinary sweet or cold-storage butter by giving it that delicious 'fresh' taste such as mother used to serve us 'right out of the churn.'" The "users" mentioned must have been greatly deluded.

At the top of the third page it reads: "Treat your guests to delicious 'Buttero' butter, with the delicate 'fresh' taste, instead of serving them butter which has possibly been in cold storage for months." It is difficult to see how a little salt and starch could improve butter if it was really injured by being in cold storage.

Under "Directions," one is informed (1) "To each $\frac{1}{2}$ pound of good fresh butter (cut up in small pieces) add $\frac{1}{2}$ lb. (a small $\frac{1}{2}$ pint) of lukewarm water (about 75° Fahr.), and (2) $\frac{1}{2}$ teaspoonful of 'Buttero'; (3) add a little good butter coloring, if desired; (4) salt to taste, and (5) stir or churn until the butter has absorbed all of the water, usually from 15 to 40 minutes."

It is hard to see how half a teaspoonful of water containing a little salt and starch could make butter take up an equal weight of water. As a matter of fact, this "Buttero" has nothing to do with it, for the very same results can be obtained without its use. The writer has taken half a pound of butter and half a pound of water and by patiently stirring these two ingredients together has produced a pound of adulterated butter which holds the added half pound of water perfectly. Any one can do the same thing without

even having seen "Buttero" by simply taking a half pound of butter at 75° to 80° F. in a bowl and stirring and mixing very patiently until a half pound of warm water has been absorbed by the butter. It can then be salted to taste, left in the bowl or formed into any shape on a plate, put into the ice box, and after a few hours will be hard. Simply bear in mind that you have no more butter than you started with, but have simply adulterated a half pound of butter with a half pound of water. It is true the product will spread over more bread than would be covered by the original half pound of butter and a saving may be made in that way, but an equal saving with no work can be made by simply using half as much butter on one's bread.

Products claiming to do the same as "Buttero" were exposed in 1893 in a circular issued by the United States Department of Agriculture entitled "Nostrums for Increasing the Yield of Butter," Farmers' Bulletin No. 12.

Butter prepared with any of these compounds and water can easily be detected by any one. Simply melt some in a small glass in hot water and the melted mass will then be seen to consist of about half water at the bottom with the butter fat floating on the surface. Butter when similarly treated should not contain over 12 to 14 per cent water.

ICE CREAM.

"Ice cream is a frozen product made from cream and sugar, with or without flavoring, and contains not less than 14 per cent of milk fat." (Kansas standard.)

The best ice cream conforms to this standard and even contains a larger quantity of butter fat, up to 16 and 18 per cent, and in addition contains nothing but sugar and pure flavoring. By keeping the standard in mind, the following products can be better judged.

Samples sent in by Doctor Lamborn, food and milk inspector for Kansas City, Kan.:

Lab. No. 7. Label, Frozen Sweets, Artificially Colored. Vendor, B. Neiswander, Kansas City, Kan. Butter fat, 9.25 per cent. Contains gelatine.

Lab. No. 8. No label on goods. Vendor, C. F. Wolf, Kansas City, Kan. Butter fat, 9.27 per cent. Contains gelatine.

Lab. No. 9. Label, Strawberry Ice Cream, Artificial Color and Artificial Flavor. Vendor, W. O. Phillips, Kansas City, Kan. Butter fat, 11.04 per cent. Contains gelatine, coal-tar dye and artificial flavor. This is not strawberry ice cream artificially colored

and artificially flavored, but is an imitation strawberry ice cream and should be so labeled. Illegal.

Lab. No. 10. No label; said to be vanilla ice cream. Vendor, T. Koclams, Kansas City, Kan. Butter fat, 12.06 per cent. Contains gelatine. Illegal.

Lab. No. 11. Label, Ice Cream, Contains Best Gelatine and Vegetable Color. Manufacturer, St. Louis Dairy Company. Retailer, J. R. Collins. Butter fat, 11 per cent. Contains gelatine. Illegal.

Lab. No. 12. Label, Ice Cream, Contains Best Grade of Gelatine and is Artificially Colored with Vegetable Coloring. Manufacturer, Meyers Sanitary Milk Company. Retailer, Carl McDonald. Butter fat, 13.9 per cent. Gelatine present. Just below the standard.

Lab. No. 13. No label. Manufacturer, DeCaussey Pure Milk Company, Kansas City, Kan. Retailer, Tom Koclams. Butter fat, 11.4 per cent. Contains gelatine. Illegal.

Lab. No. 14. Label, Vanilla Ice Cream, Artificially Colored. Manufacturer, DeCaussey Pure Milk Company, Kansas City, Kan. Vendor, Jos. H. DeCaussey. Butter fat, 11.2 per cent. Contains gelatine. Illegal.

Lab. No. 15. No label. Manufacturer, North East Dairy Company. Retailer, D. Weise. Butter fat, 7.5 per cent. Contains gelatine and coal-tar dye. Illegal.

Lab. No. 16. Pickles. Label, Dining Car Sweet Pickles. Manufacturer, F. J. Horn Preserving Co., Kansas City, Mo. Saccharin absent; alum present and not stated. Illegal.

ORANGE EXTRACT.

No. 2159. Passed.

No. 2203. Passed.

No. 2769. Passed.

No. 7674. Label, Dunham's Triple Concentrated Extract of Orange. Pure. Manufacturer, J. W. Dunham, Wichita, Kan. Retailer, D. A. Graham, Wichita. Orange oil, 4.4 per cent. This product is, therefore, adulterated and misbranded—adulterated because it does not contain 5 per cent orange oil necessary to make a legal extract, and misbranded because it claims to be three times as strong and to be concentrated. It is a weak orange extract. Illegal.

LEMON EXTRACT.

No. 2621. Imitation Lemon Flavor. Ingredients: Oil of lemon, 2.6 per cent; water, 19.396 per cent; alcohol, 78 per cent; curcuma

root, 0.004 per cent. Manufacturer, M. M. Fenner Company, Fredonia, N. Y. Retailer, C. H. Taylor, Wilder, Kan. Illegal.

Upon analysis this sample is found to contain 2.45 per cent of lemon oil, and is colored with turmeric. This is not an imitation lemon flavor, for "An imitation flavor is an uncolored solution consisting largely of artificial flavoring substances dissolved in ethyl alcohol of proper strength, is labeled as an imitation, and conforms in name to the flavor imitated" (Kansas standard), while in this product natural lemon oil is actually present; not, however, to the extent claimed on the label.

The product is an adulterated lemon extract, as it contains less than 5 per cent lemon oil, less alcohol than is stated on the label, and is colored with turmeric, which is not stated on the label, and which makes it appear better than it really is.

A comparison of prices will also throw light on this product. Lemon extract No. 2673, reported in the May BULLETIN, costs \$1.25 per dozen bottles of 2 ounces each, and contains 6.1 per cent of lemon oil. No. 2621 above costs \$1 per dozen bottles of 1½ ounces each and contains 2.45 per cent of lemon oil. Since 1½ ounces is three-fourths of 2 ounces, if No. 2621 is figured to a two-ounce basis it would cost \$1.33, as compared with No. 2673 at \$1.25. In addition, No. 2621 contains less than half as much oil, therefore less than half as much flavoring principle, as does No. 2673, and costs more.

People should learn that products that appear cheap are often more expensive than the high-grade article. One argument offered by manufacturers for putting out goods below the legal standard is that they have to manufacture for the poor man, but the above case shows that one cheaper product is really much more expensive, when flavoring power is considered, than is one of the high-grade flavoring extracts.

No. 2690. Same product as described under No. 2621. Same remarks, except lemon oil is 2.55 per cent. Illegal.

No. 2717. Label, Ess. Lemon. Manufacturer not known. Retailer, J. B. Hampton, Colby. Lemon oil, none. Adulterated and misbranded. Illegal.

No. 2762. Label, Ext. Lemon. Contains 90 per cent alcohol by volume. Manufacturer or jobber, Van Naita Drug Company, St. Joseph, Mo. Retailer, Scott & Taber, Holton. Alcohol, 70.32 per cent; oil of lemon, 1.05 per cent. This is adulterated and misbranded—adulterated, in that it does not contain 5 per cent lemon oil necessary to make legal extract, and that it contains 20

per cent added water over that declared on label; misbranded, in that it claims to be an extract of lemon containing 90 per cent of alcohol, while it is not an extract of lemon and contains only 70 per cent of alcohol. Illegal.

No. 2778. Sample too small for complete analysis.

No. 7233. Passed.

No. 7511. Label, Gladstone Brand Pure Food Flavoring Lemon. Manufacturer, The Gladstone Medicine Company, Sioux City, Iowa. Retailer, W. H. Sheridan, Dexter. Bought from medicine wagon. Oil of lemon, 4.7 per cent. Illegal.

No. 8534. Label, Sp. Lemon (inspector's label). Manufacturer, not known. Retailer, Phil Aherne, jr., The Economy Store, Wichita. Oil of lemon, 3.6 per cent. Illegal.

No. 9054. Sample too small for analysis

No. 9062. Banner Brand Terpeneless Extract. Manufactured for Theo. Poehler Mercantile Company, Lawrence. Retailer, Wm. Steinbring, Lake View. Citral, 0.10 per cent. The standard for terpeneless extract of lemon is 0.20 per cent citral. Illegal.

No. 9210. Two Oz. Full Measure American Beauty Brand Terpeneless One-half Strength Lemon Flavor, 40 per cent Alcohol. Manufactured for Kansas City Wholesale Grocery Company, Kansas City, Mo. Retailer, White & Shinn, Olathe. Citral, 0.05 per cent. This is only one-fourth strength. Illegal.

No. 2708. Label, Extract of Lemon Soluble. Contains alcohol 50 per cent, for preparation of syrup of lemon for soda fountain. Manufacturers, Eli Lilly & Co., Indianapolis, Ind. Retailer, N. G. Edelblute, Topeka. Inspector's remarks: "Opened package, new goods." Analysis shows alcohol 42.86 per cent; citral, 0.114 per cent; colored with coal-tar dye. This is no extract of lemon soluble, but is a weak terpeneless extract of lemon and contains only a little over one-half the required content of citral to make a terpeneless extract of lemon, and contains less alcohol than is stated on label. Adulterated and misbranded. Illegal.

SOFT DRINKS.

No. 2746. Sample bore no label. Manufacturer, Concordia Bottling Works, Concordia. Retailer, T. J. Mindrup, New Almelo. Colored with coal-tar dye. Illegal.

No. 5550. Orange. Manufacturer, Champagne Cider Company, Kansas City, Mo. Retailer, J. B. Gilbert, Kansas City, Kan. Contains saccharin. Illegal.

No. 5551. Broken in transit.

No. 5552. Label, Eagle Brand Artificial Strawberry Soda, Arti-

Artificially Flavored and Colored. Manufacturer, Eagle Bottling Company, Kansas City, Mo. Retailer, John Riggs, Kansas City, Kan. Contains saccharin. Illegal.

No. 5553. Strawberry Artificial Flavor and Color. No saccharin or preservative. Passed.

No. 5554. No saccharin or preservative. Passed.

No. 5560. No saccharin or preservative. Passed.

No. 5561. No saccharin or preservative. Passed.

No. 5562. No saccharin or preservative. Passed.

No. 5563. No saccharin or preservative. Passed.

No. 5564. No saccharin or preservative. Passed.

No. 5565. No saccharin or preservative. Passed.

PICKLES.

No. 6446. Sweet Pickles. Tested for alum and saccharin. None present. Passed.

No. 6447. Sour Pickles. Tested for alum. None found. Passed.

No. 6448. Piccalilli. Tested for alum, saccharin and preservatives. None found. Passed.

No. 6449. Sour Pickles. Tested for alum. None found. Passed.

No. 6450. Pickle Gherkins. Tested for alum. None found. Passed.

No. 6451. Tested for alum. None found. Passed.

No. 6461. Pickles. Tested for alum. None found. Passed.

No. 6462. Pickles. Tested for alum. None found. Passed.

No. 6464. Pickles. Tested for alum. None found. Passed.

No. 6466. Pickles. Tested for alum. None found. Passed.

No. 6467. Pickles. Tested for alum. None found. Passed.

No. 6471. Spiced Pickles. Tested for alum and saccharin. None found. Passed.

No. 6472. Pickles. Tested for alum. None found. Passed.

No. 6456. Dining Car Sweet Pickles, contains saccharin. Manufacturer, F. J. Horn Preserving Company, Kansas City, Mo. Retailer, Swan Bros., Urbana. Saccharin present, which is prohibited in all food products in Kansas. Illegal.

No. 9263. Sweet Pickles. Tested for saccharin. None found. Passed.

No. 9264. Dining Car Brand Sour Pickles, contains saccharin. Manufacturer, F. J. Horn Preserving Company, Kansas City, Mo. Retailer, W. L. Coleman & Beard, Overbrook. Saccharin present, which is prohibited in all food products in Kansas. Illegal.

No. 7663. Label, Pearl Onions. Tested for preservatives and sulphites, which were not found. Passed.

No. 7664. Capres. Non Pareilles Produits Alimentaires Supérieurs Monbadon Brand, Bordeaux, France. Importers, Reiss & Brady, New York. Retailer, Boston Store Company, Wichita. Contains small amount of copper and sulphites. Illegal.

No. 7665. Label, Capers. Non Pareil Produits Alimentaires Marque de Fabrique. Importer, Jules Lalance, New York. Retailer, Boston Store Company, Wichita. Contains small amount of copper and sulphites. Illegal.

No. 7666. Label, Capres. Capotes V. C. Brand Capres. Importers, Glaser, Kohn & Co., Chicago, Ill. Retailer, A. L. Herrington, Wichita. Contains small quantity of copper and sulphites. Illegal.

No. 7667. Pearl Onions. Tested for preservatives and sulphites, which were not found. Passed.

No. 7668. Capers. Tested for copper and sulphites. Not found. Passed.

BAKING POWDER.

No. 9257. J. C. Grant's Bon Bon Baking Powder. "We guarantee Bon Bon Baking Powder to be pure and wholesome. The latest pure food scientific knowledge is utilized now, as for many years in the past, in its skillful manufacture. Bon Bon Baking Powder leaves in food prepared with it no residue of Rochelle salts or caustic potash resulting from the use of cream of tartar." The words "caustic potash," in connection with the rest of the last statement, constitute a misstatement, and the product thereby becomes misbranded. It should be stated, however, that this misstatement on the label does not affect the character of the goods, and these words are now omitted from the label. Manufacturer, J. C. Grant Chemical Company, East St. Louis, Ill.

No. 9245. White Clover Baking Powder. Manufacturer, Leon Specialty Company, St. Louis, Mo. Retailer, J. W. Blue, Carbondale. The formula on the label fails to state phosphate, which is present. Illegal.

BREAD.

Six loaves of bread were purchased in Lawrence to see if the weights and measures law was being observed. Section 13 reads:

"A loaf of bread for sale shall be two pounds in weight. Bread, unless composed in chief part of rye or maize, shall be sold only in whole, half and quarter loaves and not otherwise. Bread, when sold, shall, upon the request of the buyer, be weighed in his pres-

ence, and if found deficient in weight additional bread shall be delivered to make up the legal weight, except that this section shall not apply to rolls or to fancy bread weighing less than one-quarter of a pound. Every loaf, half-loaf or quarter-loaf of bread which does not weigh the full weight required by this section shall be plainly labeled with the exact weight."

The six loaves all weighed less than three-quarters of a pound, therefore they would be considered as half-loaves and should weigh one pound. Since they did not, they should have been "plainly labeled with the exact weight." This also was not done.

The labeling of the bread with its exact weight, when it does not weigh the full half pound, pound or two pounds, should be strictly enforced, for otherwise the consumer does not know what he is getting for his money. Loaves of bread weighing 10 ounces, 12 ounces and 13 ounces all sell for five cents, and yet the 13-ounce loaf weighs a third more than the 10-ounce loaf. The actual weights of the loaves follow:

First loaf.....	71.9	per cent of one pound.		
Second loaf.....	71.5	"	"	"
Third loaf.....	74.5	"	"	"
Fourth loaf.....	73.8	"	"	"
Fifth loaf.....	73.6	"	"	"
Sixth loaf.....	72.5	"	"	"

MOLASSES AND SYRUPS.

No. 7572. Label, Dark Molasses, contains Sulphur, a Delight to the Epicure. Manufacturer, Bliss Syrup Refinery Company, Kansas City. This is no dark molasses, but is a second molasses and should be so labeled. It is adulterated and misbranded—adulterated, in that a second molasses is substituted for molasses, and that it claims by the label to be molasses and is a second molasses.

No. 7573. Label, Ginger Cake Brand Molasses. Complies with the Pure Food Law in all States. Manufacturers, Berry-Maybrun Company, New Orleans and Chicago. This is a second molasses and should be so labeled. It is adulterated and misbranded for the same reason as is No. 7572.

No. 7632. Syrup. Passed.

No. 7637. Label, Cane Sugar and Maple Syrup Kanuck Brand Syrup. Manufacturer, Corn Products Refining Company, New York City. This sample is labeled so as to give the impression that it has substantially equal parts of cane sugar syrup and maple syrup, but the cane sugar syrup is greatly in excess, which should be designated as flavored with maple, or state the per cent of maple. It is misbranded.

No. 7639. Syrup. Passed.

No. 9176. Maple Syrup. Passed.

No. 9277. Maple Sugar. Passed.

No. 9177. Molasses. Label, Belvidere Brand Baking Molasses, contains Sulphur Dioxide. Manufacturer, Bliss Refining Company, Kansas City, Mo. This is adulterated and misbranded—adulterated in that a second molasses is substituted for molasses, and misbranded in that the label fails to state that it is second molasses.

CIDER.

No. 6455. Label is that of the inspector only. Manufacturer, Clarkesville Cider Company, St. Louis, Mo. Retailer, W. R. Dougherty, La Harpe. This product contains no preservative and is a true cider and contains 6.26 per cent alcohol.

While a standard has not yet been set for cider, it is well known, in common usage of the word, to be the fermented juice of apples, and varies in its content of alcohol between 5 and 10 per cent.

That this is the common meaning of the word is borne out by the fact that it is defined to be the fermented juice of apples or an alcoholic beverage obtained by the fermentation of the juice of apples, by the leading dictionaries and encyclopedias and in books on chemistry relating to the subject.

Though a very few references may be found which mention that the word cider has at times been applied to other fermented fruit juices, still the great preponderance of opinion is that it is fermented alcoholic apple juice. It is, of course, understood that "sweet cider" is the unfermented apple juice, kept from changing by proper sterilization, or consumed fresh before fermentation has progressed to any appreciable extent.

There have been received so-called Blackberry Cider, Orange Cider, Cherry Cider, etc.

In the first place they are not the fermented juice of the apple or even the fruit mentioned, and are not ciders in any sense of the word, but are artificial mixtures made from a so-called extract diluted with water and colored with a coal tar dye to imitate the color of the fruit mentioned. They are adulterated and misbranded—adulterated in that an artificial, imitation product colored by coal-tar dye is substituted for the genuine article, and misbranded in that they are labeled Cherry Cider, etc., while not being the fermented juice of the respective fruits.

No. 9104. Label, Apple Cider, Fruit Valley Apple Cider. Jobber, Guymon-Petro Mercantile Company, Hutchinson. Retailer, Wm. Kern, Frederick. Preserved with benzoic acid. Illegal.

No. 9105. Label, Blackberry Cider. Jobber, Guymon-Petro Mercantile Company, Hutchinson. Retailer, William Kern, Frederic. Illegal.

No. 9106. Label, Orange Cider. Jobber, Guymon-Petro Mercantile Company, Hutchinson. Retailer, William Kern, Frederic. Illegal.

No. 9107. Cherry Cider. Jobber, Guymon-Petro Mercantile Company, Hutchinson. Retailer, William Kern, Frederic. Illegal.

PECAN NUTS, SHELLLED.

No. 2399A. These were purchased from the news agent on the Santa Fe train between Kansas City and Dodge City. The package cost 10 cents and weighed 1.125 ounces, which is at the rate of \$1.42 per pound. Passed.

RICE.

No. 7686. Sheep's Head Brand Rice. Packed for Letts-Spencer Grocery Company, St. Joseph, Mo. Retailer, John F. Miller, Pleasanton. Coated with a mineral substance, not stated. Illegal.

No. 7687. Bulk Rice. Jobber, Long Bros., Kansas City, Mo. Retailer, George T. Wolf, Blue Mound. Coated with a mineral substance, not stated. Illegal.

No. 7689. The Telmo Brand Rice. Manufacturer, Franklin, McVeagh & Co., Chicago. Retailer, Frank Wilson, Osawatomie. Coated with a mineral substance, not stated. Illegal.

BAKED BEANS.

No. 7671. Tested for preservative. None found. Passed.

No. 7672. Tested for preservative. None found. Passed.

No. 7673. Tested for preservative. None found. Passed.

No. 9196. Tested for preservative. None found. Passed.

MEAT COLOR.

No. 7685. Label, Rosaline Verlinu Brand Konservirungs Salt. Manufacturer, B. Heller & Co., Chicago. Retailer, E. F. Matz, Hillsboro. This consists of common salt, Chili saltpeter and coal-tar dye.

HONEY.

No. 9155A. Honey. Passed.

OATSUP.

No. 7684. Examined for preservatives, saccharin and color. None found. Passed.

DRUG ANALYSES No. XXX.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The present report from the drug laboratory includes, besides a variety of proprietary articles, a statement as to the findings of this laboratory with regard to tincture of aconite and tincture of nux vomica. It should be said, in regard to our test for strength for tincture of aconite, that the Squibb's physiological method has been used, which is now recommended by many of our leading chemists and physiologists. As this portion of the report is largely educational, it has been considered important in this respect only. Our investigation seems to point to the fact that aconite preparations are not permanent, but we feel that this instability may be overcome. The latter point we shall take up later. Our investigations point to one thing definitely, namely, that tincture of aconite should be made from the drug itself and not by a dilution of the fluid extract.

We believe that the pharmacists of Kansas are anxious to have standard preparations of potent drugs, and the deteriorations referred to seem to be beyond their control at present.

We should again emphasize that the Kansas food and drugs law does not recognize certain provisions of the federal law which relate to declarations on label of substandard materials; for example, if a product is sold under or by the U. S. P or N. F., it must conform to standards set forth in those volumes, and any declarations indicating a deviation from standards must be disregarded in Kansas.

TINCTURE OF NUX VOMICA.

Tincture of Nux Vomica should contain in 100 cc. 0.1 gm. of strychnine and about 70 per cent of alcohol.

Lab. No.	Insp. No.	NAME.	City.	Gm. strychn. in 100 cc.	Per cent alcohol.	Gm. ext. in 100 cc.
3663	2278	Clyde Drug Co.....	Clyde.....	0.140	63.10	2.09
3679	2289	Dr. C. F. Atwood.....	Palmer.....	0.110	63.10	1.47
3700	2310	E. T. Burgen.....	Scottsville.....	0.093	71.15	2.13
3709	2319	M. Smith.....	Miltonvale.....	0.093	71.10	1.48
3719	2329	J. W. West.....	Narka.....	0.094	78.05	.929
3725	2335	G. L. Fisher & Co.....	Webber.....	0.082	65.40	1.62
3746	2356	W. L. McCarty & Co.....	Concordia.....	0.083	73.80	1.24
3762	2372	E. L. Ebnother.....	Downs.....	0.081	67.70	1.23
3823	8370	Elex. Roese.....	McCune.....	0.091	65.25	1.02
3835	8377	J. L. Mathis.....	Greensburg.....	0.093	71.85	.889
3892	2433	S. M. Scheffer.....	Bonner Springs...	0.087	75.15	.899
3942	2476	C. H. Cain.....	Tonganoxie.....	0.0904	69.90	.882
4101	2571	Elk Drug Co.....	Wichita.....	0.087	73.05	1.14
4279	2666	Palace Drug Co.....	Manhattan.....	0.092	66.95	.....
4324	8559	Burrows Drug Store.....	Iola.....	0.090	.....	.....
4335	8570	E. W. Bartleson.....	Pleasanton.....	0.084	.....	.....
4345	8580	Legitimate Drug Co.....	Chanute.....	0.115	.....	.....
4461*	8620	Welch Bros.....	Garnett.....	.....	.....	.....
4474	8634	Louis N. Lawrence.....	Cedar Point.....	0.106	67.50	.....

* Sample too small for analysis.

TINCTURE OF ACONITE.

In testing these tinctures, Squibb's physiological method was employed. It was agreed by three operators that a dilution of one part of a standard tincture of aconite in 800 produced a distinct tingling sensation on the tongue. This tincture was considered 100 per cent, and the per cent strength of all other tinctures was calculated from this standard.

Lab. No.	Insp. No.	Per cent strength.	Per cent alcohol.	How made.	RETAILER.	City.
3577	2255	2.5	①....	.....	E. R. Brown.....	Eskridge.
3579	2257	30.1	65.4	.....	Dr. Jewett Drug Co.....	Eskridge.
3581	2259	Below 2.5	64.9	.....	Dr. L. A. Walker.....	Harveyville.
3647	2262②	20.8	66.	From fl. ext...	T. E. Brandon.....	Clyde.
3683	2293	7.8	①....	.....	Algie's Cash Drug Store..	Linn.
3686	2296	6.2	60.1	Unknown.....	Dr. R. W. Mainty.....	Linn.
3713	2323	20.8	75.	.....	J. E. Janeway.....	Haddam.
3715	2325	15.6	①....	From fl. ext...	S. T. Yoder.....	Haddam.
3718	2328	26.	70.1	Bought.....	J. W. West.....	Narka.
3723	2333	20.8	70.8	From fl. ext...	Bixby & Potter.....	Republic.
3730	2340	25.	70.	.....	D. A. Nywall.....	Scandia.
3783	2343	17.8	73.1	Unknown.....	Republic Pharmacy.....	Belleville.
3736	2346	20.	①....	From fl. ext...	Arbuthnot & Billingsley..	Belleville.
3738	2348	6.2	70.5	Bought.....	Arbuthnot & Billingsley..	Belleville.
3740	2350	20.8	64.8	From fl. ext...	M. G. Reed.....	Cuba.
3742	2352	6.9	65.4	.....	Geo. M. McEckerson.....	Concordia.
3745	2355	6.9	48.5	" "	W. M. McCarty & Co.....	Concordia.
3754	2364	50.	65.4	Unknown.....	J. G. Trueblood.....	Glen Elder.
3758	2368	6.2	72.4	From fl. ext ..	D. R. Seymour.....	Ionia.
3770	2380	3.	①....	Unknown.....	S. E. Cogswell.....	Kirwin.
3774	2384	6.9	65.9	.....	Dr. L. T. Brown	Kirwin.
3779	2389	20.8	71.9	From fl. ext...	Zimmerman Drug Co.....	Portis.
3783	2398	15.6	67.	Bought.....	Baldwin & Co.....	Osborne.
3787	2397	20.8	69.6	From fl. ext..	H. B. Leach & Son.....	Alton.
3790	2400	10.3	66.4	.....	J. B. Hatfield.....	Osborne.
3795	2405	15.6	66.1	From fl. ext...	Thomas Brown.....	Logan.
3800	2410	31.2	73.4	Bought.....	Smith Drug Co.....	Stockton.
3808	2418	20.8	72.6	From fl. ext...	G. R. Thomason.....	Stockton.
3829	8371	20.8	72.6	.....	J. P. Roberts.....	McCune.
3837	8379	5.	71.1	.....	Wayne C Alford.....	Mullinville.
3839	8381	Below 2.5	67.	.....	A. W. McKinley.....	Haviland.
3841	8383	25.	60.9	.....	Pettijohn Drug Co.....	Haven.
3845	8387	8.1	①....	.....	Dodge & Fuller.....	Ashland.
3846	8388	6.2	①....	.....	Rice Bros.	Ashland.
3858	8400	10.4	69.8	.....	Junction Pharmacy.....	Coffeyville.
3871	8413	7.8	73.9	.....	Sunflower Pharmacy.....	Independence.
3872	8414	17.4	62.5	.....	I. G. Fowler.....	Independence.
3878	2419	8.8	50.7	From fl. ext...	Forline & Utt.....	Downs.
3888	2429	Below 2.5	74.6	.....	Bunch Drug Co.....	Beloit.
3894	2435	20.8	72.8	" "	Dr. Clarke Kelley.....	Bonner Springs.
3897	2438	10.4	60.71	" "	Fred Schroeder.....	Leavenworth.
3901	2442	15.6	①....	" "	C. L. Walkenwitz & Co...	Leavenworth.
3928	8457	2.7	①....	.....	Arnold Drug Co.....	Topeka.
3939	2473	4.7	61.15	Unknown.....	Dr. I. J. McCalman.....	Piper.
3941	2475	31.2	66.2	From fl. ext...	C. H. Cain.....	Tonganoxie.
3948	2482	8.3	①....	.....	Cleverdon Bros.....	Leavenworth.
3951	2485	34.7	68.4	" "	R. L. Igel.....	Leavenworth.
3957	2491	6.2	①....	Bought.....	Rebsamen Pharmacy.....	Leavenworth.
3960	2494	Below 6.2	60.	.....	Adolph Lange.....	Leavenworth.
3974	8420	Below 3.	66.7	.....	H. S. Mustard.....	Cherryvale.
4004	8450	31.2	59.6	.....	I. L. Graen.....	La Harpe.
4010	8462	3.1	63.4	.....	Owl Drug Store.....	El Dorado.
4015	8467	6.2	66.	.....	Sollit & Swarts.....	Arkansas City.
4021	2473	25.	64.8	.....	John S. Cree.....	Arkansas City.
4079	2549③	2.5	62.6	Bought.....	J. W. Crookson Drug Co..	Wichita.
4114	2584	33.	68.8	Unknown.....	G. A. Murphy.....	Wichita.
4184	2595	Below 5.	①....	.....	C. E. Potts.....	Wichita.

1. Insufficient quantity to determine alcohol.
2. Tincture of aconite leaves.

Lab. No. 2888, Insp. No. 1870. "Happy Life Pills." Retailer, Charles Johnson, Newton. Manufacturer's name not stated on package, but has the statement "Sold by Dr. A. B. Seelye, Abilene." Claimed to be a perfect remedy for biliousness, liver complaint, constipation, headache, disorders of the stomach, jaundice, chills and fever, loss of appetite, impurities of the blood, and all

congestive conditions arising from functional derangements. Contained no alcohol. Contained starch, capsicum and aloin.

Lab. No. 3000, Insp. No. 1980. "Dr. Clifton's Brazilian Face Soap." A white vegetable-oil soap containing no insoluble matter. Ash 17.28 per cent, practically all sodium carbonate.

Lab. No. 3103, Insp. No. 2083. "Japanese Menthodine." Prepared by Pfeiffer Chemical Company, St. Louis, Mo. External remedy for treatment of neuralgia, catarrh, cold in the chest, croup, sore throat, bruises, etc. Preparation contained considerable menthol. The vehicle was composed of white petrolatum and paraffin. Passed.

Lab. No. 3497, Insp. No. 2183. "Neutralizing Cordial." J. C. Rawls & Co., Argentine. Found to contain 33 per cent alcohol and the required amount of potassium carbonate. Passed.

Lab. No. 2542, Insp. No. 2220. "Yo San Scalp Comb and Shampoo." Found to be a soap containing 21.9 per cent of potassium carbonate. Perfumed with rose.

Lab. No. 3546, Insp. No. 2224. "Fl. Ext. Cotton Root." J. M. Bowen, Atchison. Preparation had a fair appearance and contained 38.6 per cent of alcohol.

Lab. No. 3547, Insp. No. 2225. "Fl. Ext. Cotton Root." J. M. Bowen, Atchison. Found to contain a large amount of sediment. Below standard.

Lab. No. 3558, Insp. No. 2236. "Sugar Coated Pills of Leptandrin." Manufactured by Allane, Woodard & Co., Peoria, Ill. Old stock; coating off some pills.

Lab. No. 3696, Insp. No. 2356. "Belladonna Ointment." R. W. Fairchilds, Randall. Preparation was strongly alkaloidal. Passed.

Lab. No. 4109, Insp. No. 2579. "Powdered Nux Vomica." Southwestern Drug Company, wholesalers, Wichita. Found to contain 1.82 per cent strychnine and no foreign admixture. Passed.

Lab. No. 4353, Insp. No. 8588. "Ess. of Peppermint." F. B. Snyder, Wellington. Found to contain 9.88 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4437, Insp. No. 5017. "Thargol Compound." Prepared by the Indiana Pharmacal Company, Fort Wayne and Indianapolis, Ind. Claimed by the manufacturer to be a concentrated and powerful nervine. Indicated in all diseases of the nervous system. Thargol is prescribed with infusion of hops. Thargol, 2 oz., infusion hops, 6 oz. Thargol was found to be a strong solution of the bromides (principally lithium bromide) and tonka.

Lab. No. 4448, Insp. No. 8599. "Ess. of Peppermint." Elgin Drug Company, Elgin. Found to contain 9.65 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4449, Insp. No. 8600. "Ess. of Peppermint." J. A. Andrews, Chautauqua. Found to contain 8.11 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4450, Insp. No. 8607. "Ess. Jamaica Ginger U. S. P." J. J. Sippy, Belle Plaine. Found to contain 92.1 per cent alcohol. Passed.

Lab. No. 4451, Insp. No. 8610. "Ess. of Peppermint." A. J. Athay, Le Roy. Found to contain 8.37 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4452, Insp. No. 8611. "Tr. of Iodine." C. E. De-Malorie, Madison. Found to contain 7.42 gm. iodine and 5.32 gm. potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4454, Insp. No. 8613. "Ess. of Peppermint." R. H. Wigner, Gridley. Found to contain 9.99 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4456, Insp. No. 8615. "Ess. of Peppermint." W. J. Briggs, Burlington. Found to contain 5.32 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4457, Insp. No. 8616. "Ess. of Ginger." H. E. Cowgill, Burlington. Found to contain 92.75 per cent alcohol. Passed.

Lab. No. 4459, Insp. No. 8618. "Ess. of Peppermint." R. G. Draper & Co., Greeley. Found to contain 9.19 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4460, Insp. No. 8619. "Tr. of Iodine." A. T. Holcomb & Co., Garnett. Found to contain 12.52 gm. of iodine and 7.18 gm. of potassium iodide in 100 cc. of tincture. Above standard.

Lab. No. 4462, Insp. No. 8621. "Tr. of Iodine." J. L. Ruble, Parker. Found to contain 9.2 gm. of iodine and 2.89 gm. of potassium iodide in 100 cc. of tincture. Above standard in iodine and below standard in potassium iodide.

Lab. No. 4463, Insp. No. 8622. "Ess. of Peppermint." W. J. Olmsted, Parker. Found to contain 4.72 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4464, Insp. No. 8623. "Tr. of Iodine." Noel Somers, Centerville. Found to contain 7.62 gm. of iodine and 5.81 gm. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4465, Insp. No. 8624. "Tr. of Iodine." D. W. Hainer,

Emporia. Found to contain 6.62 gm. of iodine and 3.82 gm. of potassium iodide in 100 cc. of tincture.

Lab. No. 4466, Insp. No. 8622. "Ess. of Peppermint." Red Cross Pharmacy, Emporia. Found to contain 9.24 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4468, Insp. No. 8628. "Ess. of Peppermint." G. W. Britton, Hartford. Found to contain 6.50 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4469, Insp. No. 8629. "Tr. of Ginger." The Popular Pharmacy, Frank R. Sheets, proprietor, Strong City. Found to contain 94.15 per cent alcohol.

Lab. No. 4471, Insp. No. 8631. "Ess. of Peppermint." Hilton's Pharmacy, Cottonwood Falls. Found to contain 8.14 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4472, Insp. No. 8632. "Ess. of Peppermint." E. D. Replogle, Cottonwood Falls. Found to contain 6.60 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4473, Insp. No. 8633. "Ess. of Peppermint." L. B. Breese, Elmdale. Found to contain 7.42 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4475, Insp. No. 8635. "Tr. Gentian." O'Brien & Tarrant, Florence. Found to contain 3.433 gm. of extractive in 100 cc. of tincture, and 50.5 per cent alcohol.

Lab. No. 4477, Insp. No. 8637. "Ess. of Peppermint." J. W. Steiger, White Water. Found to contain 8.52 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4480, Insp. No. 8641. "Ess. of Peppermint." Chas. Johnson, Newton. Found to contain 10.7 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4481, Insp. No. 8642. "Ess. of Peppermint." E. E. Bloom & Co., Hutchinson. Found to contain 8.24 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4484, Insp. No. 8645. "Ess. of Peppermint." Briggs Bros., Hutchinson. Found to contain 9.15 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4486, Insp. No. 8647. "Tr. of Iodine." Dr. James Allen, Hutchinson. Found to contain 7.42 gm. of iodine and 6.99 gm. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4487, Insp. No. 8648. "Ess. of Peppermint." Geo. S. Burford, Nickerson. Found to contain 7.82 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4488, Insp. No. 8649. "Tr. of Ginger." The Cooke Pharmacy, Nickerson. Found to contain 94 per cent alcohol.

Lab. No. 4490, Insp. No. 8651. "Ess. of Peppermint." J. W. Duff, Sterling. Found to contain 0.937 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4492, Insp. No. 8653. "Tr. of Gentian Compound." Wharton Pharmacy, Lyons. Found to contain 3.444 gms. of extractive and 53.9 per cent alcohol. Passed.

Lab. No. 4495, Insp. No. 8657. "Ess. of Peppermint." Palace Drug Store, Halstead. Found to contain 10.46 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4496, Insp. No. 8660. "Ess. of Peppermint." The Teed Drug Company, Sylvia. Found to contain 5.66 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4497, Insp. No. 8661. "Ess. of Peppermint." Sentney Wholesale Grocery Company, Hutchinson. Manufactured by Thompson & Taylor, Chicago. Found to contain 0.75 cc. of oil in 100 cc. of essence and 49.7 per cent of added water. Adulterated.

Lab. No. 4499, Insp. No. 8663. "Standard U. S. P. Spt. of Nitre." Manufactured by the Thompson & Taylor Spice Company, Chicago. Alcohol declared, 80 per cent. Found to contain 3.59 per cent ethyl nitrite.

Lab. No. 4500, Insp. No. 8664. "Ess. of Peppermint." Bert Moore, Inman. Found to contain 5.21 cc. of oil and 6.8 per cent of added water. Contained oil of spearmint. Adulterated.

Lab. No. 4503, Insp. No. 8667. "Ess. of Peppermint." C. W. Engborg, McPherson. Found to contain 9.49 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4504, Insp. No. 8668. "Ess. of Peppermint." Bixby & Lindsay, McPherson. Found to contain 9.98 cc of oil in 100 cc. of essence. Sample has odor of oil of wintergreen.

Lab. No. 4508, Insp. No. 8673. "Ess. of Peppermint." Tanner & Uhl, St. John. Found to contain 9.19 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4512, Insp. No. 8677. "Tr. of Iodine." Roger's Drug Store, Arlington. Found to contain 7.12 gm. iodine and 3.89 gm. of potassium iodide in 100 cc. of tincture. Below standard in potassium iodide content.

Lab. No. 4513, Insp. No. 8678. "Ess. of Peppermint." Frank C. Broderick, Severy. Found to contain 8.99 cc. of oil in 100 cc. of essence.

Lab. No. 4514, Insp. No. 8679. "Tr. of Ginger." R. E. Marsh, Severy. Found to contain 91.6 per cent alcohol. Passed.

Lab. No. 4516, Insp. No. 8681. "Ess. of Peppermint." Butin Bros., Fredonia. Found to contain 9.65 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4518, Insp. No. 8683. "Ess. of Peppermint." City Drug Store, Fredonia. Found to contain 9.29 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4521, Insp. No. 8686. "Tr. of Ginger." Thos. Lindley, Toronto. Found to contain 92.5 per cent alcohol. Passed.

Lab. No. 4522, Insp. No. 2722. "Spt. of Camphor." W. L. Howe, Alma. Found to contain 6.45 per cent of camphor and 18.4 per cent added water. Adulterated.

Lab. No. 4526, Insp. No. 2726. "Cascarilla Tonic." C. D. Smith Drug Company, St. Joseph, Mo. Declared by the manufacturer to contain not more than 26 per cent alcohol. Found to contain 24.1 per cent alcohol. Extractive from 100 cc., 10.98 gm.; ash from 100 cc., 0.046 gm.

Lab. No. 4527, Insp. No. 2727. "Spts. of Nitre." Manufactured by Richardson Drug Co., Omaha, Neb. Alcohol declared by manufacturer, 48 per cent. Sample was put up in transparent, loosely corked bottle, and contained no ethyl nitrite. Deteriorated.

Lab. No. 4528, Insp. No. 2728. "Spt. of Camphor." H. F. Dunker, Ludell, retailer. Richardson Drug Company, Omaha, Neb., manufacturers. Alcohol declared by manufacturer to be 70 per cent. Found to contain 7.31 per cent camphor and 24.8 per cent added water. Below standard. Adulterated.

Lab. No. 4529, Insp. No. 2729. "Ess. of Peppermint." Manufactured by Richardson Drug Company, Omaha, Neb. Alcohol declared by the manufacturer, 60 per cent. Found to contain 1.31 cc. of oil and 34.8 per cent added water. Below standard. Adulterated.

Lab. No. 4530, Insp. No. 2730. "Tr. of Iodine." Dr. L. G. Graves, Atwood. Found to contain 6 gm. of iodine to 100 cc. of tincture, and potassium iodide was absent. Adulterated.

Lab. No. 4531, Insp. No. 2731. "Spt. of Camphor." Dr. L. G. Graves, Atwood. Found to contain 4.89 per cent camphor. Below standard.

Lab. No. 4532, Insp. No. 2732. "Spt. of Camphor." N. H. Lewis, McDonald. Found to contain 8.03 per cent camphor. Below standard.

Lab. No. 4533, Insp. No. 2733. "Spt. of Camphor." N. H.

Lewis, McDonald. Found to contain 11.9 per cent camphor. Above standard.

Lab. No. 4534, Insp. No. 2734. "Ess. of Peppermint." Found to contain 9 cc. of oil in 100 cc of essence.

Lab. No. 4537, Insp. No. 2737. "Need-A-Tone." Manufactured for Evans-Smith Drug Company, Kansas City, Mo., by Schuster Brewing Company, Rochester, Minn. Guaranteed to contain less than 2 per cent alcohol. Found to contain 1.25 per cent alcohol.

Lab. No. 4539, Insp. No. 2739. "Spt. of Camphor." Richardson Drug Company, Omaha, Neb. Alcohol declared, 70 per cent. Found to contain 6.08 per cent camphor and 29.1 per cent added water. Below standard. Adulterated.

Lab. No. 4545, Insp. No. 2745. "Jamaica Ginger Extract." Prepared by the Goodrich Drug Company, Omaha, Neb. Alcohol declared, 50 per cent. Preparation was put up for a flavoring extract. The Goodrich Company puts up a line of medicines "for western people, prepared especially for this climate." They are called the Nebraska Medicines, such as the Nebraska Corn Cure, etc. Jamaica ginger extract was found to contain 50 per cent alcohol. Preparation was light-colored and not very pungent. Below standard.

Lab. No. 4547, Insp. No. 2747. "Spt. of Camphor." Locke & Hardenbrook, Oketo. Found to contain 16.3 per cent camphor. Above standard.

Lab. No. 4552, Insp. No. 2752. "Wine of Antimony." Axtell Drug Company, Axtell. Found to contain 6.1 gm. of antimony and potassium tartrate in 1000 cc., and 16.5 per cent alcohol. Wine of antimony should contain 4 gm. of antimony and potassium tartrate in 1000 cc., and about 30.5 per cent alcohol.

Lab. No. 4553, Insp. No. 2743. "Spt. of Camphor." Creevan's Drug Store, Axtell. Found to contain 14.2 per cent camphor. Above standard.

Lab. No. 4554, Insp. No. 2754. "Spt. of Camphor." Adolph Lange, Leavenworth. Found to contain 8.43 per cent camphor and a trace of added water. Adulterated.

The introduction of sewerage and house drainage into ten cities was followed by a reduction of deaths from typhoid fever to one-third the previous number.

STATE WATER SURVEY No. VII.

By E. H. S. BAILEY, Ph. D., Director, and C. C. YOUNG, Analyst.

LAWRENCE, KAN., July 16, 1910.

We have to report the following analyses made in our laboratory since date of last report. These analyses are mostly of city and proposed city supplies. County health officers and city officials sending in waters to the laboratory for analysis should be very careful to instruct express agents not to put sealing wax directly upon the stoppers of containers. The stopper should be covered with cotton cloth, and this may be sealed if so desired.

SANITARY ANALYSES OF WATERS.

(Parts per million.)

No.....	City.	Date, 1910.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₃	N. in NO ₂	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed...
125	Ashland	4 16	0.040	0.056	0.5	0.0005	30	738	156	0.69
126	Arkansas City:									
	(a) Well No. 1.....	4 25	0.354	0.224	1.5	0.03	29	536	187	7.00
	(b) Well No. 2.....	4 25	0.174	0.298	4.0	0.02	53	601	188	4.44
127	Altoona.....	4 26	0.094	0.076	10.0	trace	91	770	225	1.03
128	Colby.....	4 40	0.040	0.080	2.0	trace	15	506	129	0.32
129	Dodge City.....	5 12	0.016	0.030	1.5	none	18	342	101	0.11
130	Great Bend:									
	(a) Well No. 1.....	4 13	0.088	0.060	0.3	none	58	565	100	none
	(b) Well No. 2.....	4 13	0.076	0.070	0.5	none	56	571	95	none
	(c) Hydrant.....	4 13	0.050	0.012	0.5	trace	54	569	106	none
	(d) Shallow well....	4 13	0.076	0.094	none	none	61	764	164	1.78
	(e) Deep well.....	4 13	0.046	0.036	none	none	59	339	69	none
	(f)	4 13	0.062	0.016	none	none	56	385	81	none
131	Jamestown.....	3 24	0.194	0.184	0.3	trace	36	2,148	274	4.65
132	Lecompton:									
	(a) A. Schellhorn ..	4 13	0.204	0.126	20.0	0.005	60	713	362	7.04
	(b) K. Schellhorn ..	4 13	0.108	0.088	trace	0.0005	8	226	98	4.53
133	Pratt:									
	(a) Above sewer....	3 24	0.148	0.238	0.3	0.002	33	275	96	4.37
	(b) Sewage.....	3 24	8.150	2.790	none	none	131	721	268	40.62
	(c) Below sewer....	3 24	0.380	0.350	none	0.005	35	237	115	12.63
	(d) $\frac{3}{4}$ mile below sewer.....	3 24	0.430	0.294	0.5	0.007	35	256	91	3.65
	(e) Intake fish canal	3 24	0.234	0.430	0.3	0.007	44	275	95	3.72
	(f) City water.....	3 24	0.124	0.148	2.0	none	92	388	155	1.70
134	Salina.....	4 29	0.054	0.114	2.0	0.001	61	719	199	0.813
135	Seneca (spring)	4 14	0.090	0.140	1.5	0.002	5	363	139	0.24
136	Valley Falls	4 26	0.128	0.102	1.0	0.001	9	170	86	0.75
137	Winfield:									
	(a) Spring No. 1....	3 29	0.044	0.036	none	none	15	2,000	249	0.60
	(b) Spring No. 2....	3 29	0.038	0.042	none	none	13	2,104	227	0.65
	(c) Spring No. 3....	3 29	0.078	0.156	none	trace	14	2,066	176	1.45

DETAILS.

125. Ashland.—This water was received from Tom Veach, city engineer, it being the expectation of the city to use it as a permanent city supply. There seems to be nothing in the chemical analysis to indicate that the water is not satisfactory. The mineral matter is somewhat higher than in most waters, but is probably as good as can be obtained in that locality.

126. **Arkansas City.**—These two samples were sent in by W. S. Scruton, superintendent. (a) Iron oxide, 14.3 parts per million; sulphates, 63.19 parts per million. (b) Iron oxide, 28.6 parts per million; sulphates, 108 parts per million. These waters are rather high in organic matter, and unless they show marked improvement upon long pumping, would not advise their adoption as city supplies without further information as to their location and source.
127. **Altoona.**—This water was sent in as a proposed city supply. It was taken from a well west of the city. The nitrates seem to be high, also the sulphates and the common salt. If these are not the prevailing quantities in other wells in the neighborhood, it will be well to make a further investigation.
128. **Colby.**—This water was sent by R. R. Coon, through Prof. W. C. Hoad, state sanitary engineer, in hopes that it might be used as a city supply. There is nothing in the analysis to show that the water is not of good quality. Iron oxide, 4.29 parts per million; sulphates, 107.62 parts per million.
129. **Dodge City.**—This water was sent in by C. A. Milton as a prospective city supply. This well was 142 feet deep, 6-inch casing being sunk into 20 feet of sand and gravel. Pumping for five hours at the rate of 400 gallons per minute failed to lower the water level. This is a very soft water, and there is nothing in the chemical analysis to show that the water would be unwholesome.
130. **Great Bend.**—These six samples of water were received from the Great Bend Water and Electric Company. Analysis shows them all to be free from contamination, so far as chemical analysis can show.
131. **Jamestown.**—This water was collected in hopes that it might be used as a city supply. Analysis showed a turbidity of 1600 parts per million. Such a high turbidity would make the water absolutely unfit for a city supply; however, if this were removed, the water might be available for that purpose.
133. **Pratt.**—These samples were taken for the purpose of determining whether or not the sewage from the septic tank from the city of Pratt was in any way doing harm to the state fish hatchery located two miles farther down the creek into which the septic tank emptied. Upon consultation with the sanitary engineer it was decided that at the present time the fish in the hatchery would not be harmed by the sewage, and by the time the city of Pratt had grown to a point where the sewage would be harmful, the large amount of sewage would be a nuisance to the city, and for its own protection the city would be compelled to put in contact filter beds.
134. **Salina.**—Dr. H. N. Moses, of the Salina Hospital, sent in this water to see if there could be any danger of pollution. Taking into consideration the sketch of the surroundings and the analysis there does not seem to be any radical indications of pollution.
135. **Seneca.**—This water is a spring water collected by Dr. S. J. Crumbine as a proposed city supply.
136. **Valley Falls.**—This water was shipped by Prof. W. C. Hoad as a proposed supply for that city.

137. Winfield.—These three analyses were made of the water from springs, and show them to be almost identical. As far as the chemical analysis can show, no trace of contamination is indicated. These waters were sent in by Dr. C. T. Ralls, county health officer.

KANSAS CITY, KAN., WATER SUPPLIES.

Some time ago the Water Survey laboratory made a report on some of the Topeka wells, showing that they were liable to contamination. We have been carrying on more extensive investigations upon the wells and springs of Kansas City, and in this work have had the assistance of E. A. White, teacher of chemistry in the Kansas City high school, and the late Mr. W. L. Sippy, who was at the time employed as analyst in the laboratory at the University.

Mr. White made a study of the waters with special reference to the geological position of the source, and the strata through which the water ran. North of the Kansas river wells are sunk in a porous clay which is an old glacial moraine. This lies on top of an impervious, flinty limestone, known here as the Upper Erie. This is at the bottom of nearly all the wells. Some of the wells are sunk in the silt between the bluffs. On the south of the river the hills are covered by a thirty-foot layer of Iola limestone, which is broken and full of crevices. Mr. White's results are in part as follows:

SANITARY ANALYSIS OF KANSAS CITY (KAN.) WATERS (1909).
(Parts per Million.)

No.....	LOCATION.	N. in free NH ₃	N. in Alb. NH ₄	N. in NO ₃ ...	N. in NO ₂ ...	Cl.....	Solids.....	Loss on ignition.....	Bacteria per 1 cc.....
138	Tap water.....	0.036	0.160	8.5	.....	19.5	891	116	1,000
139	Blind School.....	0.082	0.104	12	0.002	38.8	529	100	100
140	Missouri River. R.....	0.040	0.320	8.6	.....	20	576	52	1,200
141	Sp. Rv. avenue.....	0.600	0.820	11	0.001	27.8	462	105	20,000
142	216 N. Sixteenth street.....	0.042	0.200	11	.....	34	586	100	250
143	Sp. Eleventh and Ohio.....	0.160	0.060	5	.....	87	622	150	700
144	Sp. Thirteenth and Bk.....	0.056	0.220	10	0.005	62	700	123	1,000
145	953 Kansas avenue.....	0.040	0.030	10	.....	36	920	165	.....
146	1215 Osage.....	1.700	0.220	15	0.001	21	980	170	7,000
147	347 Walker.....	0.084	0.330	12	.....	128	1,222	512	900
148	Sp. Nineteenth and Q.....	0.020	0.020	12	0.001	13	556	116	50
149	423 Everett.....	.....	0.420	18	0.002	100	2,125	690	1,000
150	1950 N. Twelfth.....	0.004	0.020	12	0.001	64	565	220	600
151	1923 N. Fourteenth.....	0.002	0.040	12	0.001	12	275	154	100
152	1820 N. Thirteenth.....	0.120	0.080	12	0.003	18	325	90	600
153	K. C. University.....	0.090	0.100	10	0.001	8.4	235	50	500
154	Chelsea School.....	.....	0.160	18	.....	48	701	211	100
155	Gst. Hts.....	.....	0.320	18	0.001	84	1,610	240	1,000
156	841 Minn.....	0.300	0.240	14	0.020	60	735	320	800
157	C. Gst. School.....	0.120	0.170	10	0.002	7	125	65	200

From these analyses the following conclusions, among others, may be drawn: The well at the School for the Blind appears to be excellent water. No. 141 is a very dangerous water, and should be condemned. No. 142, location bad; liable to become contaminated. No. 144, water suspicious. No. 146, an iron water, containing much organic matter; surroundings should be thoroughly investigated before the water is approved. No. 148, a good illustration of an uncontaminated spring. No. 149, a dangerous water. No. 150, to be regarded with suspicion. No. 152, bad surroundings and high nitrites render the water suspicious. No. 154 should be carefully watched, as there are even now some indications of contamination. No. 155, a new locality, but the water might easily become contaminated. No. 156, there are evidences of so much organic matter that the water is suspicious. No. 157 shows the presence of smoke and dust in the water, from the washings off the roof.

SANITARY ANALYSES BY W. L. SIPPY OF KANSAS CITY (KAN.) WATERS (1908).

WELLS.

No.....	LOCATION.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₂	N. in NO ₃	Cl.....	Solids.....	Loss on igni- tion.....
158	Blind School.....	0.066	0.080	12	trace	32.3	546	228
159	1932 N. Thirteenth	0.080	0.164	3	trace	15	258	108
160	2747 May	0.168	0.100	35	①.....	82	725	268
161	1517 New Jersey.....	0.066	0.210	15.8	①.....	46	544	300
162	2146 Locust.....	0.060	0.092	15.8	0.001	114	1,208	621

SPRINGS.

163	Seventh and Garfield.....	0.028	0.070	18	trace	19	352	140
164	.....	0.032	0.050	28	trace	18	315	160
165	1231 New Jersey.....	0.048	0.054	16	.....	29	550	234
166	Throop avenue.....	0.038	0.124	28	trace	31	725	235
167	Eleventh and Ohio	0.032	0.064	10	0.002	25	430	175

CISTERNS.

168	811 Lafayette.....	0.084	0.218	5	.....	6	231	79
169	418 N. Fifth.....	0.226	0.160	4	trace	8	153	64
170	1030 Barnett.....	0.136	0.088	17	.....	7	117	52
171	Catholic school.....	0.140	0.198	2	0.002	3	201	71
172	1137 Sandusky.....	0.192	0.146	18	0.002	18	430	172
173	1136 Ella.....	0.080	0.118	4	0.004	8	127	52

CITY SUPPLY.
(Average of six analyses.)

174	Tap water.....	0.069	0.114	1.52	trace	27	613	170
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1. Too much to measure.

Without giving too many details in reference to the conclusions from these analyses, it may be noted that No. 159 shows bad surroundings. No. 160 is a bad water—there was a case of typhoid at this place when the sample was taken. Nos. 161 and 162 are both dangerous waters; sickness had occurred at these houses. No. 163 and No. 164 are not safe to use. No. 166 should be regarded with suspicion. All the cistern waters mentioned show

evidences of contamination, and not sufficient care in their collection.

SUMMARY FOR KANSAS CITY WATERS.

Of the four sources of water supply in use here, the only safe supply is the city water. There is nothing in the chemical analysis of this water to indicate that it is not safe. It is of the highest importance, however, that the city supply ample settling basins and filters to clarify and purify the Missouri river water. It is only by furnishing a clear and palatable water that the citizens will be induced to stop using the wells, springs and cisterns, the water of which is positively dangerous, although it may be clear and sparkling and have an agreeable taste.

Polished Rice and Beriberi.

The Public Health Reports of July 1, 1910, contain a most interesting article under the caption "Beriberi in the United States," in which the history of the disease in this country is reviewed, and a rather startling theory as to the cause of the disease is advanced, in that polished rice is made the scapegoat for the ravages of this dread disease. Most of the rice sold in this country is polished for the purpose of making it look clean, uniform in appearance, and, therefore, more desirable; or, to use the language of the food and drugs law, to "make it appear better than it really is." We have long held to the opinion that such treatment was in conflict with the law, but we were not prepared for the announcement that the removal of the fine dust that nature has put on the rice grain has made a wholesome food product a menace to the public health if eaten as a regular and continuous diet. If the findings of the Public Health and Marine Hospital Service is later confirmed, as it seems likely to be, the "polished rice" will have to go.

The facts as quoted from the Public Health Reports are as follows:

"Various theories as to the etiology of beriberi have been advanced from time to time. These have consisted mainly of two general classes, the one assuming the disease to be an infection and the other assuming it to be due to faulty nutrition or intoxication. In this connection a paper read before the Far Eastern Association of Tropical Medicine at Manila on the 10th of last March by Dr. H. Fraser, delegate from the government of the Malay states, is of considerable interest, as being perhaps the most satisfactory piece of work which has so far been done on the subject.*

* New York Medical Journal, April 30, 1910, p. 762.

"Doctor Fraser experimented with chickens in lots of 12. One lot was fed upon white, polished rice; another lot of 12 upon unpolished rice. In the lot to which polished rice was fed, 8 cases of beriberi appeared between the sixtieth and seventieth days. Those fed upon unpolished rice remained well. The feeding was continued for several weeks and the chickens in the lot fed upon polished rice began to die. The lot fed on unpolished rice continued to remain well. This same experiment was repeatedly made with other groups of chickens with the same result. Then lots of chickens in which beriberi had been produced were fed with unpolished rice and they rapidly recovered.

"The next experiment was to feed two lots of chickens as in the first instance, one upon polished rice and the other upon unpolished rice until beriberi had been produced in chickens fed upon polished rice. Then the food was changed. Those which had been fed upon polished rice were fed upon unpolished rice and those which had up to this point been fed upon unpolished rice were given polished rice. The result was that the sick chickens recovered and after the usual period of approximately sixty days the chickens that were then receiving the polished rice developed beriberi. Later an opportunity presented for performing the experiment upon man. Two hundred and fifty laborers who were being sent to a part of the country in which beriberi had not existed to work upon railroad construction, were divided into two lots, half of them being fed upon polished rice, the other half upon unpolished rice. The men were carefully picked to exclude any cases of beriberi, incipient or otherwise, from among them. Beginning with the sixtieth day, cases of beriberi appeared among the laborers who were being fed upon polished rice; none among the others. The feeding was continued for a sufficient length of time to show that no cases would develop among those that were fed upon unpolished rice. Then the food was reversed. Those who had been previously fed upon polished rice were given the unpolished, and vice versa, with the same result as that which had been obtained in the experiments with chickens. The cases of beriberi proceeded to recover, while after a period of approximately sixty days cases of the disease appeared among the group of laborers to which originally unpolished rice had been fed, but which later received the polished rice.

"To ascertain, if possible, the reason why a diet of polished rice apparently produced the disease, the polishings from rice were fed to chickens affected with beriberi, with the result that they recovered. Then a group of chickens was placed upon a diet of polished rice and was fed in addition a sufficient amount of polishings to make up for that which had been removed from the rice used. No beriberi developed among the chickens in this group. It was found that chickens did not develop beriberi until the polishings given with the rice were reduced to less than half of that which had been removed from the whole rice.

"The statement is also made that during the preceding year unpolished rice had been used in all the public institutions in the

Straits Settlements, and that cases of beriberi had ceased to develop in these institutions.

"Doctor Aron, of the Philippine Medical School, also presented a paper before the association giving the result of work which seemed in many ways to corroborate the results obtained by Fraser.

"As previously noted on page 647, Passed Assistant Surgeon Heiser reported that in view of the findings above referred to, the beriberi patients in the hospitals of the Bureau of Health of the Philippine Islands have been treated by administering rice polishings, with the result that the cases rapidly recovered and that unpolished rice was being used in institutions in which beriberi had been formerly rife and that the disease had completely disappeared.

"That more may be learned of the prevalence and geographic distribution of beriberi in the United States, it will be appreciated if health officers and others knowing of cases of this disease will write to the Surgeon-General of the Public Health and Marine Hospital Service, Washington, D. C."

Anterior Poliomyelitis.

The following number of cases and deaths from anterior poliomyelitis were reported to this department up to August 26, 1910:

<i>County.</i>	<i>Cases.</i>	<i>Deaths.</i>	<i>County.</i>	<i>Cases.</i>	<i>Deaths.</i>
Brown	8	1	Montgomery.....	1	1
Chautauqua	2	1	Nemaha.....	2	0
Cherokee.....	1	0	Pawnee	1	0
Cheyenne	2	1	Phillips	4	2
Cloud	2	0	Pottawatomie.....	1	0
Crawford	2	0	Pratt.	1	1
Decatur.....	4	1	Reno.....	3	0
Douglas	5	2	Republic	2	1
Gove.....	1	1	Riley.....	5	2
Greeley	1	0	Sedgwick	1	0
Jefferson.....	3	1	Shawnee	13	3
Jewell.....	1	1	Wabaunsee.....	5	2
Kingman.....	1	1	Wyandotte.....	5	0
Linn	1	0			
McPherson.....	5	1	Total.....	83	23

The Purification of Water by Hypochlorites.

A large variety of chemical substances have been used in experiments on water purification, and a few of them have found their way into practical use. We have several times discussed the employment of ozone in the treatment of public water-supplies, and have noted that the relatively high expense and the difficulty of securing uniform production are obstacles to the general introduction of the ozone process on a large scale. Recent experience with other methods of water disinfection is, however, more promising.

In sewage disinfection the use of bleaching-powder, an impure product composed largely of calcium hypochlorites, has been studied rather extensively in Germany, and has been the subject of excellent experimental work by Phelps in this country, at Red Bank, N. J., and at Baltimore. It was but a step to apply a similar treatment to polluted drinking water. Already, in 1897, bleaching-powder had been used for this purpose in Maidstone, England, at the time of a typhoid epidemic due to a polluted water-supply. The use of bleaching-powder for the purification of the Jersey City water-supply in 1908-9 drew further attention to the process, and was the starting point of the greatly accentuated interest in this subject that has been shown during the past year. The construction and operation of the disinfecting plant were intrusted to a firm of sanitary experts, and their report has been received with merited confidence. The degree of purification effected may be judged from the fact that while the number of bacteria in the raw water ranged from 30 up to 1600, the treated water contained an average of but 15, and in only one sample out of 455 tests was *Bacillus coli* found in the water delivered.

It is not surprising that results like these have given a strong impetus to the use of the bleaching-powder treatment. A number of American cities have already employed the hypochlorite treatment on a large scale. Among these are Harrisburg, Pa., and Quincy, Ill., where the process has been used in conjunction with the application of coagulants and mechanical filtration. Minneapolis, Montreal, Toronto, and recently Milwaukee, have made use of the treatment to check outbreaks of water-borne typhoid fever. The rapid spread of this method of water purification is indeed one of the most interesting and promising developments of the past two years. Up to the present the method has seemed to grow in favor. The great simplicity of the apparatus necessary for applying the disinfectant makes it possible in an emergency to install a small plant within a few days. The exceedingly low cost of the process, which seems to average less than 40 cents per 1,000,000 gallons, constitutes another important advantage. Thus far no serious objection has been brought against the hypochlorite treatment, and there has been a surprising unanimity of favorable judgment from all who have had personal experience with it. If we must have sewage in our water, let us disinfect it before drinking.
—*Journal A. M. A.*

A Dental Catechism.

What are the teeth for? To masticate food; that is, grind it into fine particles, mix it with saliva, and so begin its digestion; also to aid in speaking and singing.

How long should they last? To the very end of life.

How do we lose them? By decay, by loosening, and by accident.

What causes teeth to decay? Particles of food decaying in contact with them.

Where does food lodge? All along the edges of the gums; in the spaces between the teeth, and in the crevices of their grinding surfaces.

Can we prevent this loss? Yes, to a large extent.

How can we do it? By using the teeth properly, and by keeping them clean and the gums healthy.

What does using them properly mean? (1) Using sufficient hard or fibrous food to give the teeth and gums full exercise; (2) taking time enough to masticate food thoroughly before swallowing.

How often should the teeth be cleaned? As often as they are used.

When should they be cleansed? Immediately after the morning and noonday meals, and before going to bed.

By what means should they be cleansed? By a moderately stiff brush, water, and floss silk.

How should these be used? The brush should be first used in a gentle way, high up on the gums lengthwise of the jaws to remove large particles and stimulate the gums; then the brush and the teeth should be carefully rinsed with water. The brush should next be used with a rolling or circular motion, so that the bristles will follow the lines of all the grooves and spaces in which the particles of food have lodged, and so brush them out. Then again the mouth should be rinsed with water.

Should the gums be brushed? Yes; moderate friction helps to keep them healthy.

How can the spaces between the teeth be reached? By dental floss silk passed between the teeth, carefully drawn back and forth till it reaches the gum, pressed firmly against the sides of each tooth in turn and drawn out toward the grinding end of the tooth; and this repeated several times in each space.

Should tooth powder or paste be used? Usually once a day.

The Sickly Ham.

From the National Food Magazine.

Into a general store of a town in Arkansas there recently came a darky complaining that a ham which he had purchased there was not good. "The ham is all right, Zeph," insisted the storekeeper. "No, it ain't, boss," insisted the negro. "Dat ham's shore bad!" "How can that be," continued the storekeeper, "when it was cured only last week?" The darky scratched his head reflectively, and finally suggested: "Den maybe its had a relapse."

The Unwisdom of the Wise.

From The Fishing Gazette.

Oh, Sodium Benzoate!
Strange mystery of the Pharmacopœia—
And of the canning factories:
Wise men have studied thee,
And have called thee a slayer
Of the innocent,
Not only in the "beef-and,"
But also in the "swell-joint."
Thy life has been sought.
Other wise men have called thee Good,
Altogether Lovely and Delectable—
Preserver of the unpreservable,
Savior of the unsaved!
Now, on the square,
What is thy real character?
Dost thou eat out the vitals
Of the fellow who eats thee,
Going him one better—
Getting on his nerves and other impedimenta,
And communicating telepathically
With the undertaker around the corner,
And also the minister?
Or art thou an antitoxic angel,
Entertained unawares
Through the medium of the fish ball,
Or the canned Boston Bean,
Or other intellectual, if not intelligent, foods?
Speak! I implore thee!
Is Doctor Wiley right,
Or is he left?

A MEMORY.

How dear to my heart are the old saddlebags,
As they hang on the peg in the attic,
And I dream of the time when they played the star part
In my drama of life called "getting a start,"
And won for me glories hepatic.

Thru the mist of the years how resplendent they seem,
As my life book the pages I turn,
See the young country doctor of those early days,
With foes to heap censure and friends to give praise,
As his course they steadfastly discern.

Many long weary rides have they been my lone pal,
Thru the trail of a swamp miasmatic,
When the pale moon that hung in the infinite blue,
Helped me the sloughs of despond to eschew,
And guided from pathways erratic.

The cobwebs are thickening around my old friend,
And in festoons they drape its worn side,
And the bottles that held nitre, blue mass and pills
To patch up humanity's eternal ills,
Must stopperless ever abide.

The light and the shadow alternately fall
On the pill bags that hang in the attic,
And I take off my hat to the dear dusty thing,
As from shadowed nook they appealingly swing,
And render obeisance emphatic.

—Thekla M. Brumby.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 9.

SEPTEMBER, 1910.

VOL. VI.

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Have you recovered from your vacation ?

The wise person dresses for the weather, not the season.

The neglected cough often spells tuberculosis.

Net weights are required on all products under the Kansas weights and measures law.

In Stockholm, in the middle of the eighteenth century, the average duration of life was sixteen years, as against nearly three times that figure to-day.

In the eighteenth century the death rate in Boston was 37, as against 25 to-day, all of which marks the advance of both curative and preventive medicine.

The average Kansas drug store of to-day is quite a different proposition from what it was three years ago, both as relates to the food and drugs law and the prohibitory law. There are none better in any state.

The official death rate for 1909, just published by the Bureau of the Census, was 15 per 1000 population, just four-tenths less than for 1908. This covers only the registration area, in which Kansas is not included because we have no efficient registration law.

VITAL STATISTICS

Reported to the Kansas Board of Health for August, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...	Cases...	Deaths...
The State, total, August, 1910.....	256 294	48 65	4 3		11 7		66 29	5 4	20 16	1 0	22 26	1 1
Allen	3	3	16	1	0	0	2	0	2	0	0	0
Anderson	1	1	1	0	2	0	0	0	0	0	0	0
Atchison	0	0	1	0	0	0	0	0	0	0	0	0
*Barber												
Barton	0	0	11	1	0	0	3	0	0	0	0	0
Bourbon	0	0	0	0	0	0	0	0	0	0	0	0
Brown	0	0	1	0	0	0	0	0	0	0	0	0
Butler	3	3	6	0	0	0	0	0	0	0	1	0
Chase	0	0	0	0	0	0	0	0	0	0	0	0
Chautauque	1	1	7	0	0	0	0	0	0	0	0	0
Cherokee	0	0	6	0	0	0	0	0	0	0	0	0
Cheyenne	0	0	1	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	4	0	0	0	0	0	0	0	0	0
Coffey	4	2	0	0	0	0	0	0	0	0	0	0
Comanche	0	0	3	0	0	0	0	0	0	0	0	0
Cowley	1	1	1	1	0	0	0	0	0	0	0	0
Crawford	3	3	3	0	2	0	1	1	0	0	0	0
Decatur	0	0	3	0	0	0	0	0	1	0	0	0
Dickinson	0	0	0	0	0	0	0	0	0	0	0	0
Doniphan	1	0	0	0	0	0	0	0	0	0	0	0
Douglas	1	1	1	0	3	0	0	0	0	0	0	0
Edwards	0	0	6	0	0	0	0	0	3	0	0	0
Ellis	0	0	3	1	0	0	0	0	0	0	0	0
Ellis	0	0	6	1	0	0	0	0	0	0	0	0
Ellsworth	0	0	1	0	0	0	0	0	0	0	0	0
Finney	1	1	1	0	0	0	0	0	0	0	0	0
Ford	1	1	10	1	1	1	5	0	0	0	2	0
Franklin	3	1	4	1	2	0	3	0	0	0	0	0
Geary	0	0	1	0	0	0	0	0	0	0	0	0
Gove	0	0	4	0	0	0	0	0	0	0	0	0
Graham	0	0	1	1	0	0	0	0	0	0	0	0
*Grant												
Gray	0	0	2	0	0	0	0	0	0	0	0	0
*Greeley												
Greenwood	0	0	0	0	1	0	0	0	0	0	2	0
Hamilton	0	0	2	0	0	0	0	0	0	0	0	0
Harper	0	0	6	0	0	0	2	0	0	0	0	0
Harvey	0	0	0	0	0	0	0	0	0	0	0	0
Haskell	0	0	1	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	1	0	0	0	0	0	0	0	0	0
Jackson	1	0	7	0	0	0	0	0	0	0	0	0
Jefferson	2	0	3	0	0	0	1	0	0	0	0	0
Jewell	1	0	1	0	0	0	0	0	0	0	0	0
*Johnson												
Kearny	0	0	7	0	0	0	0	0	0	0	0	0
Kingman	1	1	4	0	0	0	1	1	0	0	0	0
Kiowa	0	0	2	0	0	0	0	0	0	0	0	0
Labette	2	2	3	0	0	0	3	1	0	0	0	0
Lane	0	0	12	0	0	0	0	0	0	0	0	0
Leavenworth	1	1	1	1	2	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0	0	0	0	0
Linn	0	0	1	0	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	0	0	0	0	0	0	0
Lyon	0	0	5	1	2	0	0	0	2	0	1	0
Marion	0	0	4	0	0	0	0	0	0	0	0	0
Marshall	3	0	10	2	0	0	1	1	0	1	0	0
McPherson	0	0	9	1	0	0	0	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES - Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	1	0	9	1	0	0	0	0	0	0	1	0
Miami	0	0	0	0	0	0	0	0	0	0	0	0
Mitchell	0	0	1	0	0	0	1	0	0	0	0	0
Montgomery	0	0	8	1	1	0	0	0	1	0	1	0
* Morris	0	0	0	0	0	0	0	0	0	0	0	0
Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	1	1	2	0	0	0	0	0	0	0	0	0
Neosho	0	0	4	0	0	0	2	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	1	0
Norton	0	0	9	0	0	0	0	0	0	0	1	0
Osage	0	0	2	0	0	0	0	0	0	0	1	0
Osborne	0	0	5	0	0	0	0	0	0	0	0	0
Ottawa	0	0	8	2	0	0	0	0	0	0	0	0
Pawnee	0	0	0	0	0	0	0	0	0	0	1	0
Phillips	2	2	0	0	0	0	1	0	0	0	0	0
Pottawatomie	0	0	8	0	0	0	0	0	0	0	0	0
Pratt	0	0	18	0	0	0	0	0	0	0	0	0
Rawlins	1	0	12	1	0	0	0	0	0	0	0	0
Reno	2	1	11	1	0	0	0	0	0	0	0	0
Republic	1	0	11	0	0	0	1	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	0	0	2	0	0	0	0	0	0	0	1	0
Rooks	1	1	4	0	0	0	0	0	0	0	0	0
Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	1	0	1	0	0	0	0	0	0	0	0	0
Saline	5	2	8	1	0	0	0	0	1	0	0	0
Scott	0	0	1	0	0	0	0	0	0	0	0	0
Sedgwick	0	0	1	0	0	0	0	0	0	0	0	0
Seward	0	0	2	0	0	0	0	0	0	0	0	0
Shawnee	0	0	1	0	0	0	0	0	0	0	0	0
Sheridan	0	0	1	0	0	0	8	0	0	0	0	0
Sherman	0	0	1	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	0	0	0	0	0	0	0	0
Stafford	0	0	4	1	0	0	4	0	0	0	8	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	1	1	7	0	0	0	0	0	0	0	0	0
* Thomas	0	0	0	0	0	0	0	0	0	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	1	0	0	0	0	0
Wallace	0	0	2	0	0	0	0	0	0	0	0	0
Washington	0	0	1	0	0	0	0	0	0	0	0	0
* Wichita	0	0	9	1	0	0	6	1	0	0	1	0
Wilson	0	0	1	0	0	0	0	0	0	0	0	0
Woodson	1	0	0	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	0	0	0	0	0	0	0	0
Cities:												
Fort Scott	1	1	2	0	0	0	0	0	0	0	0	0
Atchison	0	0	1	0	0	0	0	0	0	0	0	0
Coffeyville	8	8	10	2	0	0	7	0	0	0	0	0
Kansas City	2	6	58	9	5	0	1	0	2	0	0	0
Leavenworth	1	0	14	0	1	0	0	0	0	0	0	0
Parsons	2	2	0	0	0	0	0	0	0	0	0	0
Pittsburg	1	1	0	0	0	0	1	0	0	0	0	0
Topeka	1	8	0	0	0	4	4	0	1	0	0	0
Wichita	2	0	14	8	2	0	0	0	0	0	1	0
State Institutions.	182	2	2	0	0	0	0	0	0	0	0	0

* No reports.

DRUG ANALYSES No. XXXI.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst; C. M. STERLING, Microscopist.

The subjoined report of the drug laboratory includes a number of proprietary and official medicinal preparations. The tinctures of nux vomica which have been turned in prove to be fair samples. The tinctures of opium are very largely up to the standard, which shows a gratifying improvement. Tinctures of iodine also show improvement, but a few of these and quite a number of essences of peppermint and spirits of camphor show substandard quality. It is gratifying to report that the material turned in for analysis is, on the whole, improving, and it shows the good work that the State Board of Health is accomplishing. It is still more gratifying to your inspectors and to the drug laboratories that they are having the strong support of the druggists all over the state. Better evidence for this cannot be shown than in a recent case which has come up before the laboratory, in which a large manufacturing house was, through our reports, criticized for one of their preparations. This manufacturing house immediately corresponded with the laboratory, stating that they had noticed the criticism and had abandoned the formula for making the preparation, at the same time asking for advice as to the best way in which they could bring this difficult preparation up to the required standard by modification of the formula. We are always ready to help and very reluctant to criticize preparations that are made by well recognized, reputable houses, and when we do so it is gratifying to know that our criticism is received with such courtesy and good will.

Lab. No. 3040, Insp. No. 2020. "Medicated Croup Necklace." Manufactured by the Medicated Croup Necklace Company, Goshen, Ind. Claimed by the manufacturer to be a simple and effective safeguard against croup, and helpful for the kindred ills of child life, diphtheria, lung fever, whooping cough, etc., which seem so closely allied to croup. Found to be a small piece of cotton flannel saturated with tarry matter, to be worn about the neck.

Lab. No. 3575, Insp. No. 2253. "Tr. Kino." W. P. Brown, Alma. Preparation was light red and contained 42.5 per cent of alcohol. Specific gravity, $^{20}_{20}^{\circ}$, 0.9423.

Lab. No. 3576, Insp. No. 2254. "Tr. Kino." E. R. Brown, Eskridge. Preparation was dark red and contained 42.5 per cent of alcohol; contained no glycerin. Specific gravity, $^{20}_{20}^{\circ}$, 0.9431.

Lab. No. 3716, Insp. No. 2371. "Tr. Kino." E. L. Ebnother, Downs. Preparation was dark red and contained 57.5 per cent of alcohol. Specific gravity, $^{20}_{20}^{\circ}$, 0.9261.

Lab. No. 3786, Insp. No. 2396. "Tr. Kino." H. B. Leach, Alton. Preparation was dark red and contained 72 per cent of alcohol. Specific gravity, $^{20}_{20}^{\circ}$, 0.8984.

Lab. No. 3801, Insp. No. 2411. "Tr. Kino." Smith Drug Company, Stockton. Preparation was dark red and contained 57.5 per cent alcohol. Specific gravity, $^{20}_{20}^{\circ}$, 0.9004.

Lab. No. 3806, Insp. No. 2416. "Tr. of Nux Vomica." G. R. Thomason, Stockton. Made from fluid extract. Contained 78.7 per cent alcohol. Extractive in 100 cc., 0.96 gm. Strychnine in 100 cc. of tincture, 0.078 gm.

Lab. No. 3856, Insp. No. 8398. "Tr. of Gelsemium." J. M. Price, Emporia. Found to contain 75 per cent alcohol. Sample too small for assay.

Lab. No. 3670, Insp. No. 2280. "Tr. of Nux Vomica." Dr. C. C. Stillman, Morganville. Found to contain 51.7 per cent alcohol. Extractive from 100 cc., 0.107 gm. Strychnine in 100 cc., 0.0992 gm.

Lab. No. 3895, Insp. No. 2436. "Tr. of Nux Vomica." D. Clarke Kelley, Bonner Springs. Made from Nelson & Baker fluid extract. Contained 68.25 per cent alcohol. Extractive from 100 cc., 1.312 gm. Strychnine, 0.0992 gm.

Lab. No. 3909, Insp. No. 2450. "Tr. Kino." Ed. C. Fritsche, Leavenworth. Preparation was dark red and contained 55 per cent alcohol. Specific gravity, $^{20}_{20}^{\circ}$, 0.9541.

Lab. No. 3940, Insp. No. 2474. "Cod Liver Essence." I. J. McCalman, Piper. Declared to contain alcohol, 25 per cent; gaduol, 240 m.; pepsin, $\frac{1}{3000}$ gr.; guaiacol, 4 m., in each fluid ounce. Contained 20.5 per cent alcohol, and the stated amount of guaiacol.

Lab. No. 3953, Insp. No. 2487. "Tr. of Nux Vomica." Bud Smith, Leavenworth. Made according to U. S. P. method. Extractive from 100 cc., 0.914. Alcohol, 69 per cent. Strychnine in 100 cc., 0.073 gm.

Lab. No. 4128, Insp. No. 8500. "Tr. Kino." Higginson Drug Company, Wichita. Preparation was red, precipitated, and contained 65.8 per cent alcohol.

Lab. No. 4138, Insp. No. 8510. "Tr. of Nux Vomica." J. F. Baehr, Wichita. In 100 cc., contained 0.947 gm. extractive, 0.0895 gm. strychnine, and 67.25 per cent alcohol.

Lab. No. 4139, Insp. No. 8511. "Tr. Gelsemium." J. F. Baehr, Wichita. Found to contain 80.83 per cent alcohol.

Lab. No. 4140, Insp. No. 8512. "Tr. Kino." G. T. Riley, Wichita. Preparation was dark red and contained 57.5 per cent alcohol. Specific gravity, $^{20}_{20^{\circ}}$, 0.9406.

Lab. No. 4144, Insp. No. 8516. "Tr. Gelsemium." The Gem Pharmacy, Wichita. Contained 41.25 per cent alcohol. Sample too small for assay.

Lab. No. 4160, Insp. No. 8531. "Tr. Kino." Makin Eye Drug Company, Wichita. Preparation was dark red and contained 62.5 per cent alcohol. Specific gravity, $^{20}_{20^{\circ}}$, 0.9468.

Lab. No. 4191, Insp. No. 2602. "Almond Meal Massage Cream." Rarus Chemical Company, Chicago, Ill. Contained boric acid, casein and benzaldehyde. Colored pink.

Lab. No. 4213, Insp. No. 5001. "Marmola." Marmola has been analyzed by the British Medical Association and found to contain dried thyroid gland, phenolphthalein, sodium chloride, powdered bladder wrack, and a trace of oil of peppermint.

Lab. No. 4216, Insp. No. 2605. "Petroleum Jelly." Prepared by the Allen B. B. Wrisley Company, Chicago, Ill. S. H. Kress, Wichita, retailer. Taken internally, claimed by the manufacturer to cure croup, colds, cough and sore throat, etc. Declared absolutely pure. Ignition on platinum foil leaves no residue, but preparation has a strong petroleum-like odor.

Lab. No. 4300, Insp. No. 2685. "Tr. Sanguinaria." U. P. Pharmacy, Topeka. Contained 43.8 per cent alcohol. Sample contained considerable sediment.

Lab. No. 4309, Insp. No. 8544. "Paregoric." D. H. Kurtz, Fort Scott. Preparation contained 48.45 per cent alcohol. Passed.

Lab. No. 4409, Insp. No. 2702. "Fluidextract of Cinchona Co." Manufactured by John Wyeth Bros., Philadelphia, Pa. W. H. Wilson, Topeka, retailer. Contained 49.5 per cent alcohol. Passed.

Lab. No. 4453, Insp. No. 8612. "Tr. Opium." Walter J. Bangs, Madison. Contained 1.24 gm. of morphine in 100 cc. Passed.

Lab. No. 4455, Insp. No. 8614. "Tr. of Opium." A. J. Scofield & Co., Waverly. Contained 0.83 gm. of morphine in 100 cc. Below standard.

Lab. No. 4470, Insp. No. 8630. "Tr. Belladonna." Hynds & Arthur, Strong City Pharmacy, Strong City. Found to contain 65 per cent alcohol. Sample too small for assay.

Lab. No. 4476, Insp. No. 8639. "Tr. Stramonium." T. A. Slaymaker, Peabody. Contained 44.9 per cent alcohol. Sample too small for assay.

Lab. No. 4478, Insp. No. 8638. "Tr. Belladonna Leaves, U. S. P." W. K. Smith, Newton. Contained 40 per cent alcohol. Sample too small for assay.

Lab. No. 4482, Insp. No. 8643. "Tr. Cinchona Co." Hedges & Adams, Hutchinson. Contained 60.1 per cent alcohol. Passed.

Lab. No. 4491, Insp. No. 8652. "Tr. of Opium." Lyons Drug Company, Lyons. Contained 1.2208 gm. morphine in 100 cc. Passed.

Lab. No. 4498, Insp. No. 8662. "Sol. Carbolic Acid (Standard)." Thompson-Taylor Spice Company, Chicago, Ill. Found to contain 14 per cent phenol.

Lab. No. 4501, Insp. No. 8665. "Tr. Gelsemium." C. H. Hubbell, McPherson. Contained 76.5 per cent alcohol. Sample too small for assay.

Lab. No. 4505, Insp. No. 8669. "Tr. Hydrastis." F. G. Hinton, Kingman. Found to contain 1.4016 gm. hydrastin in 100 cc. Passed.

Lab. No. 4502, Insp. No. 8666. "Tr. of Opium." Annabel-Almen Drug Company, McPherson. Contained 1.19 gm. morphine in 100 cc. Passed.

Lab. No. 4509, Insp. No. 8674. "Tr. Opium." Webb's Pharmacy, Stafford. Contained 1.24 gm. morphine in 100 cc. Passed.

Lab. No. 4510, Insp. No. 8675. "Tr. Opium." A. & A. Drug Company, Stafford. Contained 0.9548 gm. morphine in 100 cc. Below standard.

Lab. No. 4511, Insp. No. 8676. "Tr. Opium." A. & A. Drug Company, manufacturer. Geo. E. Farney, Turon, retailer. Contained 1.2304 gm. of morphine in 100 cc. Passed.

Lab. No. 4515, Insp. No. 8680. "Tr. Lobelia." The Case Pharmacy, Fredonia. Contained 41.65 per cent alcohol.

Lab. No. 4520, Insp. No. 8685. "Tr. Opium." Will Robertson, Coyville. Contained 1.27 gm. morphine in 100 cc. Passed.

Lab. No. 4535, Insp. No. 2735. "Ess. of Peppermint." W. L. Foster & Co., Long Island. Contained 16.74 cc. of oil in 100 cc. of essence. Above standard.

Lab. No. 4540, Insp. No. 2740. "Ess. of Peppermint." Palace Pharmacy, Clayton. Contained 10.6 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4541, Insp. No. 2741. "Tr. Nux Vomica." Gaither Drug Company, Clayton. Made from fluid extract. Contained 0.074 gm. strychnine in 100 cc.

Lab. No. 4544, Insp. No. 2744. "Tr. Cantharides." Gardner's

Drug Store, Greenleaf. Contained 93 per cent alcohol and gave satisfactory test for cantharidin. Passed.

Lab. No. 4556, Insp. No. 2756. "Spt. of Camphor." C. E. Barber, Palco. Contained 9.75 per cent of camphor. Passed.

Lab. No. 4559, Insp. No. 2759. "Liquid Carbolio Acid." Mo-Pike Drug Company, jobbers. Contained 89.68 per cent phenol.

Lab. No. 4560, Insp. No. 2760. "Concentrated Ess. of Jamaica Ginger." Peninsular Chemical Company, Detroit, Mich., manufacturer. Alcohol declared, 75 per cent. Contained 65.8 per cent alcohol.

Lab. No. 4563, Insp. No. 2763. Camphorated Oil. Bacon Drug Company, Holton. Contained 18.09 per cent camphor.

Lab. No. 4579, Insp. No. 8598. "Tr. Digitalis." R. E. Rathbun & Co., Sedan. Contained 60 per cent alcohol.

Lab. No. 4582, Insp. No. 8601. "Tr. Ginger." P. N. Whitney, Cedar Vale. Contained 89 per cent alcohol. Passed.

Lab. No. 4583, Insp. No. 8602. "Spirit of Camphor." W. W. Leonard, Cedar Vale. Contained 9.32 per cent camphor. Passed.

Lab. No. 4584, Insp. No. 8603. "Tr. Jamaica Ginger." G. A. Frank, Dexter. Contained 90.75 per cent alcohol. Passed.

Lab. No. 4585, Insp. No. 8604. "Ess. of Peppermint." Hawthorth's Drug Store, Dexter. Contained 6.97 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4586, Insp. No. 8605. "Ext. Jamaica Ginger." J. E. Shaw, Mulvane. Contained 88.5 per cent alcohol. Passed.

Lab. No. 4587, Insp. No. 8606. "Spt. of Camphor." Palmer Drug Company, Mulvane. Contained 6.74 per cent camphor. Below standard.

Lab. No. 4589, Insp. No. 8609. "Tr. Ginger." Ferris Drug Company, Argonia. Contained 90.5 per cent alcohol. Passed.

Lab. No. 4590, Insp. No. 8626. "Tr. Calumba." Lewis & McCandless, Emporia. Light orange preparation. Contained glycerin and 70 per cent alcohol.

Lab. No. 4592, Insp. No. 2772. "Perfection Cold Tablets." Prepared for The Model Drug Store, Barnard. Contained aloes, quinine, salicylic acid and camphor.

Lab. No. 4593, Insp. No. 8687. "Ess. of Peppermint." J. M. Grasham, Englewood. Contained 6.32 cc. of oil in 100 cc. Below standard.

Lab. No. 4595, Insp. No. 8689. "Spt. of Camphor." James L. Murray, Coldwater. Contained 7.89 per cent camphor. Below standard.

Lab. No. 4597, Insp. No. 8691. "Ess. of Peppermint." Rice Bros., Ashland. Contained 9.82 per cent of oil. Passed.

Lab. No. 4598, Insp. No. 8692. "Ess. of Peppermint." Warren Drug Company, Sharon. Contained 9.33 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4600, Insp. No. 8696. "Tr. Belladonna." Zenda Drug Company, Zenda. Contained 40.83 per cent alcohol. Sample too small for assay.

Lab. No. 4599, Insp. No. 8695. "Ess. of Peppermint." Kiowa Drug Company, Kiowa. Contained 9.459 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4602, Insp. No. 8696. "Tr. Ginger." Geo. S. Smith & Bros., Liberal. Contained 90 per cent alcohol. Passed.

Lab. No. 4603, Insp. No. 8699. "Ess. of Peppermint." Hubbard's Drug Store, Liberal. Contained 14.58 cc. of oil in 100 cc. of essence. Above standard.

Lab. No. 4605, Insp. No. 8701. "Tr. Gentian Co." J. A. Follick, Minneola. Contained 52.9 per cent alcohol and 4.609 gm. of extractive in 100 cc. Passed.

Lab. No. 4606, Insp. No. 8702. "Ess. of Peppermint." Cole & Robb, Fowler. Contained 10.6 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4607, Insp. No. 8703. "Tr. of Iodine." Fannon Drug Company, Bucklin. Contained 7.18 gm. of iodine and 4.8 gm. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4608, Insp. No. 8704. "Tr. Gentian." Mathis Pharmacy, Greensburg. Contained 3.303 gm. of extractive in 100 cc., and 44.83 per cent alcohol.

Lab. No. 4610, Insp. No. 8706. "Tr. Ginger." Owl Drug Company, Pratt. Contained 88.5 per cent alcohol. Passed.

Lab. No. 4612, Insp. No. 8708. "Ess. of Peppermint." P. & F. Drug Company, Pratt. Contained 6.24 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4614, Insp. No. 8710. "Tr. of Iodine." Red Cross Pharmacy, Pratt. Contained 5.87 gm. of iodine and 6.34 gm. of potassium iodide in 100 cc.

Lab. No. 4617, Insp. No. 8713. "Tr. of Iodine." Hooper Drug Company, Great Bend. Contained 7.08 gm. of iodine and 3.63 gm. of potassium iodide in 100 cc. of tincture. Below standard in potassium iodide content.

Lab. No. 4618, Insp. No. 8714. "Tr. of Iodine." A. & A. Drug Company, Great Bend. Contained 6.51 gm. of iodine and 4.42 gm. of potassium iodide in 100 cc. of tincture.

Lab. No. 4619, Insp. No. 8715. "Tr. of Iodine." C. E. Holmes, Great Bend. Contained 7.25 gm. of iodine and 6.08 gm. of potassium iodide in 100 cc. Passed.

Lab. No. 4620, Insp. No. 8716. "Ess. of Peppermint." Barber's Cash Drug Store, Larned. Contained 7.13 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4621, Insp. No. 8717. "Ess. of Peppermint." C. W. Patchen, Jetmore. Contained 8.99 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4622, Insp. No. 8718. "Ess. of Peppermint." S. H. King, Pawnee Rock. Contained 14.65 cc. of oil in 100 cc. of essence. Above standard.

Lab. No. 4623, Insp. No. 8719. "Spt. of Camphor." Gem Pharmacy, Speareville. Contained 9.23 per cent camphor. Passed.

Lab. No. 4624, Insp. No. 8720. "Ess. of Peppermint." A. & A. Drug Company, Kinsley. Contained 9.82 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4625, Insp. No. 8721. "Tr. Digitalis." Contained 52.5 per cent alcohol. Passed.

Lab. No. 4626, Insp. No. 8722. "Tr. of Iodine." Demain-Powell, Macksville. Contained 7.10 gm. of iodine and 4.95 gm. of potassium iodide in 100 cc. Passed.

Lab. No. 4627, Insp. No. 8723. "Ess. of Peppermint." Pokormy Pharmacy, La Crosse. Contained 10.32 cc. of oil in 100 cc. Passed.

Lab. No. 4628, Insp. No. 8724. "Tr. of Iodine." Semple Drug Company, La Crosse. Contained 6.83 gm. of iodine and 5.07 gm. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4629, Insp. No. 8725. "Tr. Ginger." John Irving, Jetmore. Contained 91.5 per cent alcohol. Passed.

Lab. No. 4630, Insp. No. 8726. "Spt. of Camphor." Palace Drug Store, Dodge City. Contained 9.55 per cent of camphor. Passed.

Lab. No. 4631, Insp. No. 8727. "Tr. Ginger." Geo. D. Cochran Drug Company, Dodge City. Contained 91 per cent alcohol. Passed.

Lab. No. 4632, Insp. No. 8728. "Tr. Belladonna." Palace Drug Store, L. A. Baugh & Co., Garden City. Contained 63.75 per cent alcohol. Sample too small for assay.

Lab. No. 4633, Insp. No. 8729. "Ess. of Peppermint." A. & A. Drug Company, Garden City. Contained 8.99 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4635, Insp. No. 2716. "Ess. of Peppermint." Pomona Fruit Company, Pomona, manufacturer. Philip Kraft &

Son, Vassar, retailer. Contained 3.17 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4636, Insp. No. 2718. "Wine of Antimony." Robt. A. Eaton, Gem. Contained 41.25 per cent alcohol and 0.412 gm. of potassium antimony tartrate in 100 cc. of the preparation.

A sample of tincture of Kino, made in this laboratory according to the official formula, contained 60.83 per cent alcohol and had a specific gravity at $20/20^{\circ}$ of 0.9470. The U. S. P. preparation is dark red and contains glycerin.

Water Analysis Laboratory Rule.

At the quarterly meeting of the State Board of Health, held September 15, 1910, the following laboratory rule governing the analyses of samples of water was unanimously adopted:

"The water survey laboratory of the Board of Health cannot make analyses of samples of water unless the parties desiring these analyses inform us beforehand, and give us a chance to send them suitable containers in which to ship the water, and directions for collection. Expenses of transportation in both directions must be paid by the parties desiring the analysis, and complete information as to the source and surroundings of the supply must be given to the laboratory."

Revision of Regulation 8, Hotel Inspection Law.

At the quarterly meeting of the State Board of Health, held September 15, 1910, regulation 8 of the hotel inspection law was revised to read as follows:

REGULATION 8.

Fire extinguishers.

"Each and every hotel, regardless of size, shall be provided with at least one efficient chemical fire extinguisher of approved pattern to every 1500 square feet or less of floor area on each floor. The only type of chemical fire extinguisher approved by the State Board of Health is the carbonic acid gas hand fire extinguisher, which bears the label of approval of the Underwriters' Laboratories Incorporated. Neither chemical extinguishers of the breaking-bottle type, dry powder or hand grenades will be approved. Such extinguishers shall be placed in convenient permanent locations in the public hallways outside of the sleeping rooms and within easy reach, and shall be charged at intervals of not more than six months. Extinguishers shall be provided with a tag, which tag shall bear the date on which the extinguisher was last charged, written in ink, and by whom charged. Hotels equipped with standpipe and hose, of not less than two inches in diameter, attached to a wet pipe, are not required to have chemical extinguishers."

Standards of Diluted Fruit Juices.

At the quarterly meeting of the State Board of Health, held September 15, 1910, the following standards were adopted for "diluted fruit juices" and "imitation diluted fruit juices":

F. BEVERAGES.

(6th under section a. Fruit Juices.)

"6. *Diluted fruit juices.* A diluted fruit juice, such as lemonade and orangeade, is the expressed juice of the fruit corresponding to the name, together with potable water and cane sugar, without the addition of any coloring matter or flavor.

"7. *Imitation diluted fruit juices.* An imitation diluted fruit juice is an uncolored solution consisting of potable water, cane sugar, and of flavor and acidulous ingredients corresponding to the fruit imitated."

The Board, by unanimous vote, approved the following circular letter issued by the department:

CIRCULAR LETTER No. 39.

"AUGUST 19, 1910.

"*To Food and Drug Inspectors:* It is believed that the addition of pieces of lemon or lemon rinds to imitation lemonade, or the addition of color of any kind, is for the purpose of deception, and is therefore illegal. The same principle applies to other imitation 'ades' or ciders.

"Where imitation lemonade or orangeade is sold from a large container, such container must be plainly labeled with the word 'imitation' in letters at least one-half inch high, and so placed as to be in plain view of the customer.

"The 'crying' or 'barking' of lemonade or orangeade or cider, when imitation products are served, is held to be in violation of regulation 18, paragraph e, which extends to 'oral statements by the seller calculated or liable to mislead or deceive the purchaser in any respect, and cause him to believe that he is receiving goods of a different character from that of those actually delivered'; such practice is therefore illegal.

"Citric acid only with appropriate flavor and sugar will be permitted to be used in imitation products. The use of tartaric acid or saccharine is prohibited.

"Every vendor of soft drinks of any kind must keep product protected from flies or dust, and have a suitable place for the thorough washing and cleansing of glasses or cups after each time used.

Very truly yours,

S. J. CRUMBINE, M. D.,
Chief Food and Drug Inspector."

Abolishment of the Kansas Guaranty Serial Number.

When those in charge of the enforcement of the national food and drugs act provided a method whereby manufacturers and jobbers might obtain a guaranty serial number, placing the same upon foods and drugs, it was thought that a short cut was made towards eliminating all the innocent violators of the law, excepting the chief ones whose product was, as a matter of fact, adulterated and misbranded, and yet make use of the guaranty serial number. Many of the states, including Kansas, made a similar provision. This is a most admirable and fair looking theory, but in practice, so far as the individual states are concerned, both as applied to the national and state serial numbers, it has, in my judgment, been the greatest blunder in the enforcement of the law, and the most serious obstacle in the way of truthful labels and statements. It so happens that the average consumer believes, with scarcely an exception, that every package on which appears the legend of the guaranty serial number is beyond any question not only free from adulteration and misbranding, but also is of the highest quality of its kind; and I verily believe that the majority of the consumers believe that the guaranty means that the government or the state, as the case may be, has guaranteed the aforesaid article to be free from adulteration and misbranding. Not only is the consumer thus almost universally deceived, but from three-fourths to nine-tenths of the retail dealers have not yet learned the real significance of the guaranty serial number, and are of the same impression as the consumer.

It follows, therefore, that very often the most misleading statement, so far as the average retailer or consumer is concerned, that appears upon these articles of foods and drugs bearing the serial number, is that of the serial number itself. That is to say, the impression and final result upon the retail dealer and consumer is that of a misleading statement. In addition to all this the consumer is not benefited in any way that might offset this deception, for, indeed, he has no part or interest in the guaranty; that matter being entirely a provision of the law to protect the dealer as against the manufacturer or the jobber, as the case may be. Nor is the retail dealer benefited by the guaranty serial number, unless it should chance that he has neglected to secure the guaranty upon his invoice, or the blanket guaranty, which is now so generally used by the larger jobbers and manufacturers. But this same retailer is daily being deceived in the same manner as the consumer, in believing that he is buying and selling an article that meets all the

requirements of the law and is of the highest grade and quality.

In view of these facts, the Board unanimously voted to eliminate the serial number feature of regulation 7, and provided that guaranties under the food and drugs law be confined entirely to guaranty upon invoice, or the general blanket guaranty. Regulation 7, as amended, reads as follows:

“(a) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold, offered or kept for sale under a written guaranty by the wholesaler, manufacturer, jobber, dealer or other party residing in the United States from whom purchased; provided, that this exemption shall not apply when such dealer knew or ought to have known that said drugs or foods so sold, offered or kept for sale were adulterated or misbranded, within the meaning of the act, and the publication in the official publication of the State Board of Health, the BULLETIN OF THE KANSAS STATE BOARD OF HEALTH, of such drugs, liquors or foods as are adulterated or misbranded, within the meaning of the act, shall be deemed sufficient notice to dealers in the state of Kansas that such products are adulterated or misbranded.

“(b) A guarantee may be given on each bill of sale, invoice, bill of lading or other schedule, giving the name or names and quantities of the articles sold by the manufacturer or dealer to the purchaser, or the manufacturer or dealer may issue all of the foods or drugs sold by him, giving the names and quantities of the articles sold. In the event of a general guaranty being given a duplicate of said guaranty shall be filed with the secretary of the State Board of Health.

“(c) The following form of guaranty is suggested:

“I (we), the undersigned, do hereby guarantee that the articles of food (or drugs) manufactured, packed, distributed or sold by me (us) (specifying the same as fully as possible) are not adulterated or misbranded, within the meaning of the Kansas food and drugs law of February 14, 1907.

(Sign in ink) _____

(Name and place of business of wholesaler, dealer, manufacturer, jobber, or other party.)”

“Just as good,” is seldom good and never just.

Now that cooler weather is here don't be tempted to close the window in the sleeping room.

Never mind the old adage about the “hair of the dog being good for the bite,” but if a dog bites you, go after his hide.

The special mortality report recently issued by the Bureau of the Census shows a decrease in the death rate from tuberculosis in direct proportion to the amount of effort expended in preventing the disease.

Epidemic Anterior Poliomyelitis.

The following number of cases of anterior poliomyelitis have been reported to this department up to September 26, 1910:

	<i>Cases.</i>	<i>Deaths.</i>		<i>Cases.</i>	<i>Deaths.</i>
Atchison	1	..	Montgomery	1	1
Brown	12	2	Nemaha	2	..
Chautauqua	2	1	Osborne	1	..
Cherokee	1	..	Pawnee	1	..
Cheyenne	2	1	Phillips	4	2
Cloud	3	..	Pottawatomie	1	..
Crawford	11	2	Pratt	1	1
Decatur	4	1	Reno	3	..
Douglas	6	2	Republic	7	1
Gove	1	1	Riley	6	3
Greeley	1	..	Sedgwick	1	..
Greenwood	1	..	Shawnee	16	4
Hodgeman	1	1	Sheridan	1	1
Jefferson	4	1	Wabaunsee	5	2
Jewell	1	1	Washington	1	..
Johnson	3	..	Wyandotte	19	..
Kingman	2	2	Total	141	34
Linn	1	..	Mortality rate, 23.33 per cent.		
McPherson	14	4			

Warning to Mothers of Young Babies.

(From *Health and Sanitation*.)

The following list of "soothing syrups" for children is officially proclaimed by the United States government chemists as "baby killers."

If you value your child's health and life never use any of these preparations:

Mrs. Winslow's Soothing Syrup (morphine sulphate).

Children's Comfort (morphine sulphate).

Dr. Fahey's Pepsin Anodyne Compound (morphine and sulphate).

Dr. Fahrney's Teething Syrup (morphine and chloroform).

Dr. Fowler's Strawberry and Peppermint Mixture (morphine).

Dr. Grove's Anodyne for Infants (morphine sulphate).

Hooper's Anodyne, the Infants' Friend (morphine hydrochloride).

Jadway's Elixir for Infants (codein).

Dr. James' Soothing Syrup (heroin).

Koepp's Baby's Friend (morphine sulphate).

Dr. Miller's Anodyne for Babies (morphine sulphate and chloral hydrate).

Dr. Moffett's Teethina Teething Powders (powdered opium).

Victor Infant Relief (chloroform and cannabis indica).

HAPPINESS.

By JOHN J. INGALLS.

Happiness is an endowment, and not an acquisition. It depends more upon temperament and disposition than environment. It is a state or condition of mind, and not a commodity to be bought or sold in the market. A beggar may be happier in his rags than a king in his purple. Poverty is no more incompatible with happiness than wealth, and the inquiry, How to be happy though poor? implies a want of understanding of the conditions upon which happiness depends. Dives was not happy because he was a millionaire, nor Lazarus wretched because he was a pauper. There is a quality in the soul of man that is superior to circumstances and that defies calamity and misfortune. The man who is unhappy when he is poor would be unhappy if he were rich, and he who is happy in a palace in Paris would be happy in a dugout on the frontier of Dakota. There are as many unhappy rich men as there are unhappy poor men. Every heart knows its own bitterness and its own joy. Not that wealth and what it brings is not desirable—books, travel, leisure, comfort, the best food and raiment, agreeable companionship—but all these do not necessarily bring happiness and may coexist with the deepest wretchedness, while adversity and penury, exile and privation are not incompatible with the loftiest exaltation of the soul.

More true joy Marcellus exiled feels
Than Caesar with a senate at his heels.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 10.

OCTOBER, 1910.

VOL. VI.

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“Fret not thyself.”

“Are your *windows open* towards Jerusalem?”

The mole never waits for something to turn up.

The least desirable things are those you get for nothing.

Nothing great was ever achieved without enthusiasm.—*Emerson*

Ehrlich's arsenobenzol, or “606,” seems to be a specific for syphilis.

The Department of Health furnishes free diphtheria antitoxin to the indigent of the state.

It is recorded of Methuselah, who is supposed to have lived longer and therefore better than any other person, that he slept always in the open air, for when he had lived 500 years an angel said unto him, “Arise, Methuselah, and build thee an house, for thou shalt live yet 500 years longer.” But Methuselah answered and said, “If I am to live but 500 years longer it is not worth while to build me an house—I will sleep in the air as I have been used to do.” Now what do you think of that, you tight-window-scared-of-the-night-air individuals?

VITAL STATISTICS

Reported to the Kansas Board of Health for September, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State... total, September, 1909...	255 278	58 60	888 820	45 70	96 173	14 18	88 84	0 4	9 4	1 0	20 24	0 0
Allen	5	5	6	2	0	0	2	0	1	0	0	0
Anderson	0	0	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	0	0	0	0	0	0	0	0
*Barber												
Barton	0	0	9	3	0	0	10	0	2	0	0	0
Bourbon	0	0	0	0	4	2	0	0	0	0	0	0
Brown	0	0	1	0	1	1	0	0	0	0	0	0
Butler	1	1	5	0	0	0	8	0	0	0	1	0
Chase	0	0	8	0	0	0	0	0	0	0	0	0
Chautauqua	1	0	2	1	0	0	1	0	0	0	0	0
Cherokee	7	7	1	1	1	0	1	0	0	0	0	0
Cheyenne	0	0	1	0	0	0	0	0	0	0	0	0
Clark	0	0	0	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	1	0	0	0	2	0	0	0
*Cloud												
Coffey	0	0	1	1	0	0	8	0	0	0	0	0
Comanche	0	0	1	0	1	0	0	0	0	0	0	0
Cowley	8	8	7	1	0	0	2	0	0	0	0	0
Crawford	0	0	1	1	8	1	0	0	0	0	0	0
Decatur	0	0	1	0	0	0	0	0	0	0	0	0
Dickinson	0	0	2	0	1	1	0	0	0	0	0	0
Doniphan	8	1	8	1	0	0	8	0	0	0	0	0
Douglas	1	0	4	0	4	0	0	0	0	0	1	0
Edwards	0	0	2	0	0	0	0	0	0	0	0	0
Elk	2	2	1	0	0	0	0	0	0	0	0	0
Ellis	0	0	3	0	1	0	0	0	0	0	0	0
Ellsworth	2	1	1	0	0	0	1	0	0	0	0	0
Finney	1	1	6	0	1	0	0	0	0	0	0	0
Ford	1	1	18	8	0	0	7	0	0	0	0	0
Franklin	3	8	9	1	6	0	2	2	0	0	0	0
Geary	0	0	0	0	0	0	0	0	0	0	0	0
Gove	1	1	2	0	0	0	0	0	0	0	0	0
Graham	0	0	8	1	0	0	0	0	0	0	0	0
*Grant												
*Gray												
Greeley	0	0	0	0	0	0	0	0	0	0	0	0
Greenwood	0	0	2	0	0	0	1	0	0	0	0	0
Hamilton	0	0	0	0	0	0	0	0	0	0	0	0
Harper	0	0	8	0	0	0	5	0	0	0	0	0
Harvey	1	0	1	0	0	0	0	0	0	0	0	0
*Haskell												
Hodgeman	0	0	1	0	0	0	0	0	0	0	0	0
Jackson	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson	1	1	1	0	1	0	1	0	0	0	0	0
Jewell	0	0	1	0	0	0	0	0	0	0	0	0
*Johnson												
Kearny	0	0	7	1	0	0	0	0	0	0	0	0
Kingman	0	0	1	0	0	0	0	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	1	1	0	0	8	0	0	0	0	0
Lane	1	0	1	0	0	0	0	0	0	0	0	0
Leavenworth	0	0	18	1	9	0	0	0	0	0	0	0
Lincoln	0	0	1	0	0	0	0	0	0	0	0	0
Linn	0	0	1	0	0	0	0	0	0	0	0	0
Logan	0	0	2	0	0	0	0	0	0	0	0	0
*Lyon												
Marion	0	0	0	0	0	0	2	0	0	0	0	0
Marshall	2	1	25	0	0	0	0	0	2	1	0	0
McPherson	0	0	0	0	0	0	1	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	1	0	0	0	0	0	0	0	0	0
Miami	0	0	2	0	1	0	0	0	0	0	0	0
Mitchell	0	0	2	2	0	0	0	0	0	0	0	0
Montgomery	2	0	6	2	2	0	4	0	0	0	0	0
Morris	1	1	2	0	0	0	0	0	0	0	0	0
Morton	0	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	2	1	0	0	0	0	0	0	0	0
Neosho	1	1	8	1	0	0	1	0	0	0	0	0
Ness	1	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	2	0	0	0	0	0	0	0	0	0
Osage	9	0	1	0	0	0	0	0	0	0	0	0
Osborne	0	0	3	1	0	0	0	0	0	0	0	0
Ottawa	0	0	12	1	0	0	2	0	0	0	0	0
Pawnee	0	0	6	2	0	0	1	0	0	0	0	0
*Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	7	0	0	0	1	0	0	0	0	0
Pratt	1	0	0	0	0	0	0	0	0	0	0	0
*Rawlins	0	0	0	0	0	0	0	0	0	0	0	0
*Reno	0	0	0	0	0	0	0	0	0	0	0	0
Republic	1	0	8	1	2	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	0	0	4	0	2	0	0	0	0	0	0	0
Rooks	0	0	4	2	0	0	0	0	0	0	0	0
*Rush	0	0	0	0	0	0	0	0	0	0	0	0
Russell	0	0	1	0	0	0	0	0	0	0	0	0
Saline	2	2	1	0	0	0	0	0	0	0	0	0
Scott	0	0	0	0	0	0	0	0	0	0	0	0
Sedgwick	0	0	1	1	0	0	1	0	0	0	0	0
Seward	1	1	4	0	0	0	0	0	0	0	0	0
Shawnee	0	0	0	0	0	0	8	0	0	0	0	0
Sheridan	0	0	1	0	0	0	0	0	0	0	0	0
Sherman	0	0	1	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	1	1	0	0	0	0	0	0
Stafford	1	1	4	0	0	0	0	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	0	0	6	0	0	0	2	0	1	0	0	0
*Thomas	0	0	0	0	0	0	0	0	0	0	0	0
Trego	0	0	0	0	0	0	0	0	0	0	0	0
Wabaunsee	0	0	0	0	0	0	0	0	0	0	0	0
Wallace	0	0	2	0	0	0	0	0	0	0	0	0
Washington	0	0	2	1	0	0	0	0	0	0	0	0
Wichita	8	8	18	2	4	2	0	0	0	0	0	0
Wilson	1	1	8	0	0	0	6	0	0	0	4	0
Woodson	1	0	2	0	0	0	0	0	0	0	0	0
Wyandotte	0	0	0	0	2	1	0	0	0	0	0	0
Cities:												
Fort Scott	0	0	11	0	16	1	0	0	0	0	0	0
Atchison	1	1	0	0	0	0	0	0	0	0	0	0
Coffeyville	2	1	3	1	1	0	1	0	0	0	0	0
Kansas City	8	7	35	0	11	0	6	0	0	0	2	0
Leavenworth	1	1	21	2	5	0	0	0	0	0	5	0
Parsons	1	1	6	1	0	0	0	0	0	0	0	0
Pittsburg	1	1	2	0	1	0	0	0	1	0	0	0
Topeka	4	4	2	2	10	2	7	0	0	0	0	0
Wichita	2	3	18	2	4	2	0	0	0	0	0	0
State Institutions.	176	1	1	1	0	0	0	0	0	0	0	0

* No reports.

DRUG ANALYSES No. XXXIII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

We have to report, since the last month, the analyses made in our laboratory and tabulated below.

The "Elixir of Iron, Quinine and Strychnine," which is reported herewith, should be taken in conjunction with Drug Analyses No. XXVII, published in the February BULLETIN, 1910, page 39. It will be seen that there are still a few elixirs on the market which do not come up to the official standard in alkaloidal strength, but the market is improving. In separating the alkaloids the usual "washing out" process was employed, ether and chloroform being used to extract the alkaloids from the alkaloidal solutions. The ethereal extract being made in the usual way in a separatory funnel, and continuous washing with ether-chloroform was given to the alkaline solution until the alkaloidal liquid ceased to yield the active principles. The ether-chloroform solution was then evaporated and the residue weighed. But this process is always accompanied by certain loss of alkaloid (about 0.0045 gms. in 100 cc.). Allowance is made for this loss, of course, in estimating the value of a given elixir.

We desire to call your attention to the effect that the federal authorities are requiring that the preparation known as "Beef, Wine and Iron," official in the N. F., be brought up to the standard. Some months ago a report was made through this laboratory to the effect that there was much of this material on the market considerably below the official standard. It would seem proper at this time to call the attention of the druggists and to urge them to make this preparation, using only the N. F. formula.

Lab. No. 3019, Insp. No. 1999. "Schoenfeild's Kidney and Liver Tablets." Found to contain calcium carbonate and podophyllum.

Lab. No. 4071, Insp. No. 2541. "Tr. of Nux Vomica." Racer Drug Company, Wichita. Found to contain 68.3 per cent alcohol and 2.26 gm. of extractive in 100 cc. No strychnine was present.

Lab. No. 4217, Insp. No. 2606. "Petroleum Jelly." Manufacturer, Allen B. Wrisley Company, Chicago, Ill. Retailer, S. H. Kress, Wichita. Light yellow preparation having low specific gravity and a petroleum-like odor.

Lab. No. 4427, Insp. No. 5007. "Comp. Fluid Balmwort." The

Prescription Products Company, Dayton, Ohio. Found to contain potassium acetate and extractive.

Lab. No. 4485, Insp. No. 8646. "Paregoric." M. L. Klinck's Pharmacy, Hutchinson. Examined for adulteration. Passed.

Lab. No. 4640, Insp. No. 2780. "Spirit of Peppermint." J. W. King, Hillsdale. Found to contain 0.75 cc. of oil in 100 cc. of the preparation, and 49.2 per cent added water. Adulterated.

Lab. No. 4641, Insp. No. 2781. "Spt. of Camphor." Dr. J. W. King, Hillsdale. Found to contain 9.14 gm. of camphor in 100 cc. Passed.

Lab. No. 4643, Insp. No. 2783. "Sodium Salicylate Tablets." Manufactured by the Monroe Pharmacy Company, Rochester, N. Y. Tablets were found to contain 5 grains of sodium salicylate.

Lab. No. 4644, Insp. No. 2784. "Tonsilitis Tablets." P. J. Morrison, Hillsdale. Found to contain mercuric iodide, sugar, starch, talcum and some preparation of aconite.

Lab. No. 4645, Insp. No. 2785. "Neuralgia Tablets." Manufactured by Monroe Pharmacy Company, Rochester, N. Y. Retailer, P. J. Morrison, Hillsdale. Found to contain sodium bromide, acetanilid, morphine sulphate, and some preparation of gelsemium.

Lab. No. 4646, Insp. No. 2786. "Spt of Camphor." Evans-Smith Company, Kansas City, Mo. Found to contain 10.3 per cent camphor. Passed.

Lab. No. 4651, Insp. No. 2791. "Spt. of Peppermint." Keefer's Pharmacy, Kansas City. Found to contain 0.428 cc. of oil in 100 cc. of the preparation, and 26.5 per cent added water. Adulterated.

Lab. No. 4652, Insp. No. 2792. "Carbolic Acid." Harrison Drug Company, Kansas City. Found to contain 68.4 per cent phenol. Below standard.

Lab. No. 4653, Insp. No. 2793. "Essence Jamaica Ginger." Harrison Drug Company, Kansas City. Found to contain 88.25 per cent alcohol.

Lab. No. 4655, Insp. No. 2795. "Epsom Salts." Jos. Paradowsky, Kansas City. Passed.

Lab. No. 4654, Insp. No. 2794. "Spt. of Camphor." Adolph Lang, Leavenworth. Found to contain 10.32 per cent camphor. Passed.

Lab. No. 4657, Insp. No. 2797. "Spt. of Peppermint." A. B. Carter, Valley Falls. Found to contain 8.49 cc. of oil in 100 cc. of essence, and 9.4 per cent of added water. Adulterated.

Lab. No. 4661, Insp. No. 2801. "Spt. of Peppermint." W. I. Ellsworth, La Cygne. Found to contain 9.17 cc. of oil in 100 cc. of essence.

Lab. No. 4662, Insp. No. 2802. "Tr. Ginger." W. I. Ellsworth, La Cygne. Found to contain 94.6 per cent of alcohol.

Lab. No. 4664, Insp. No. 2804. "Liebig's Beef, Iron and Wine Compound." Prepared by E. Stock & Co., Kansas City. Found to contain 16.4 per cent alcohol, 11.32 gm. of extractive, and 0.104 gm. of Fe_2O_3 in 100 cc.

Lab. No. 4665, Insp. No. 2805. "Concentrated Jamaica Ginger." Prepared for J. O. Gaskill & Co., Argentine. Alcohol declared, 75 per cent. Found to contain 68.25 per cent alcohol. Shows no evidence of being a concentrated preparation.

Lab. No. 4668, Insp. No. 2808. "Tr. Capsici." Sheet's Pharmacy, Mound City. Preparation was found to contain 58.3 per cent alcohol and 28.7 per cent added water. Adulterated. Preparation had very little pungency and was artificially colored.

Lab. No. 4669, Insp. No. 2809. "Tr. of Aconite Leaves." Sheet's Pharmacy, Mound City. Found to be 20.8 per cent of a standard tincture of aconite, according to Squibb's physiological test.

Lab. No. 4670, Insp. No. 2810. "Tr. of Quassia." Sheet's Pharmacy, Mound City. Found to contain 50.15 per cent alcohol, and 0.273 gm. of extractive in 100 cc.

Lab. No. 4671, Insp. No. 2811. "Tr. of Sanguinaria." Sheet's Pharmacy, Mound City. Found to contain 53.15 per cent alcohol and 1.482 gm. of extractive in 100 cc. of the tincture.

Lab. No. 4672, Insp. No. 2812. "Tr. of Lobelia." Sheet's Pharmacy, Mound City. Sample was found to contain 36.2 per cent. alcohol and 2.068 gm. of extractive in 100 cc.

Lab. No. 4673, Insp. No. 2813. "Peroxide of Hydrogen." C. M. Ruse, Mound City. Sample was found to contain 2.94 per cent hydrogen peroxide.

Lab. No. 4674, Insp. No. 2814. "Tr. of Lobelia." United Drug Company, Pleasanton. Sample contained 45.3 per cent alcohol and 1.554 gm. of extractive in 100 cc.

Lab. No. 4676, Insp. No. 2816. "Tr. of Cantharides." United Drug Company, Pleasanton. Sample responded to the physiological test.

Lab. No. 4678, Insp. No. 2818. "Tr. of Rhubarb." United Drug Company, Pleasanton. Sample contained no glycerin. Presence of cardamon was doubtful.

Lab. No. 4679, Insp. No. 2819. "Tr. of Columbo." United Drug Company, Pleasanton. Sample was found to contain 75.25 per cent alcohol, glycerin, and a very small amount of extractive. The standard tincture of columbo contains about 2.5 gm. of extractive in

100 cc. and about 56 per cent alcohol. The standard tincture does not contain glycerin.

Lab. No. 4680, Insp. No. 2820. "Headache Tablets." United Drug Company, Pleasanton. Tablets were said to have been prepared by the United Drug Company. Ingredients were not stated on the package. Found to contain acetanilid, caffeine and sodium bicarbonate.

Lab. No. 4681, Insp. No. 2821. "Tr. of Quassia." L. A. Lhuillier, Pleasanton. Found to contain 48.2 per cent alcohol and 2.91 gm. of extractive in 100 cc.

Lab. No. 4683, Insp. No. 2823. "Tr. of Lobelia." L. A. Lhuillier, Pleasanton. Sample contained 40.1 per cent alcohol and 3.464 gm. of extractive in 100 cc.

Lab. No. 4685, Insp. No. 2825. "Xantonco." Manufactured by the McPike Drug Company. Preparation was said to possess alterative, tonic, and slightly laxative properties, and to be beneficial in dyspepsia, indigestion, dizziness, and loss of appetite, and in general debilitated condition. Sample was found to contain 26.25 per cent alcohol, cascara and aromatics.

Lab. No. 4690, Insp. No. 2826. "Lasico." Lake Side Medicine Company, Chicago. Sample was found to contain strychnine and carbonate of iron.

Lab. No. 4692, Insp. No. 2828. "Tr. of Capsici." J. M. Abeles, Leavenworth. Sample was found to contain 88 per cent alcohol. Passed.

Lab. No. 4694, Insp. No. 2830. "Tr. of Lobelia." J. C. Fuger, Hamlin. Found to contain 49.5 per cent alcohol and 1.653 gm. of extractive in 100 cc.

Lab. No. 4696, Insp. No. 2832. "Tr. of Lobelia." W. J. Eppert. Found to contain 49.5 per cent alcohol and 1.942 gm. of extractive in 100 cc.

Lab. 4697, Insp. No. 2833. "Tr. Sanguinaria." Garfield Pharmacy, Kansas City. Sample contained 80 per cent alcohol and 0.840 gm. of extractive in 100 cc. Tincture of sanguinaria should contain about 2.56 gm. of extractive in 100 cc.

Lab. No. 4698, Insp. No. 2834. "Tr. of Capsici." Garfield Pharmacy, Kansas City. Preparation was yellow and fairly pungent, and contained 90 per cent alcohol.

Lab. No. 4714, Insp. No. 8748. "Swt. Spt. of Niter." Mecca Drug Store, Coffeyville. Sample was dispensed in transparent bottles. Contained 2.54 per cent of ethyl nitrite. Experiments in this laboratory show that sweet spirits of niter is not stable in transparent bottles.

Lab. No. 4718, Insp. No. 8752. "Essence of Jamaica Ginger." Sunflower Pharmacy, Independence. Sample contained 91.65 per cent alcohol. Passed.

ELIXIR OF THE PHOSPHATES OF IRON, QUININE AND STRYCHNINE.

Lab. No.	Insp. No.	COLOR.	Specific gravity.	Solid residue from 100 cc. elixir.	Alka- loidal content from 100 cc. elixir.*
4076	2776	Normal.....	1.1110	30.7580	0.766
4236	2625	Dark, with turbidity.....	1.1510	32.2700	0.786
4247	2636	Normal.....	1.0899	18.1884	.....
4250	2637	Reddish brown, with slight turbidity	11.830	33.1400	0.364
4268	2655	Normal.....	1.1259	25.2720	0.895
4273	2660	Dark brown.....	1.0622	23.9620	0.864
4276	2663	Normal.....	1.0688	8.9320	0.711
4278	2665	Pale green.....	1.0892	6.3240	0.362
4306	2691	Dark.....	1.1432	34.1230	0.716
4307	2692	Brownish yellow	1.1367	40.9810	0.316
4308	2693	Brown.....	1.1094	20.4240	0.744
4405	2698	Normal.....	1.10947	26.4120	0.732
4649	2789	Nearly normal.....	1.1047	31.8260	0.926
Official sample—normal.....			1.0676	21.6520	0.898

* In separating the alkaloids the same method was used as was reported in February, 1910, BULLETIN.

STATE WATER SURVEY No. VIII.

By E. H. S. BAILEY, Ph. D., Director, and C. C. YOUNG, Analyst.

We have to report the following analyses made in our laboratory since date of our last report. These analyses are mostly of city and proposed city supplies. However, several school wells and cisterns have been examined. In Lawrence a small outbreak of typhoid fever necessitated the examination of several private wells. The special attention of health officers, engineers, and city waterworks superintendents is hereby called to the recent order of the Board of Health, which appeared in the September issue of the BULLETIN, whereby these officials desiring analyses made of waters should correspond with the Board of Health Laboratory and procure special containers before sending in samples.

SANITARY ANALYSES OF WATERS.
(Parts per million.)

No.....	CITY.	Date, 1910.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₂	N. in NO ₃	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed...
138	Arkansas City:									
	(a).....	6 23	0.070	0.148	none	trace	422.0	1,078	135	3.99
	(b)*.....									
139	Altoona:									
	(a) Thurman.....	7 6	0.084	0.150	40.0	0.001	212.0	1,860	351	4.68
	(b) Thayer.....	7 6	0.064	0.144	15.0	trace	31.0	1,573	594	2 05
	(c)	7 7	0.032	0.154	15.0	0.0005	29.0	590	236	3.19

SANITARY ANALYSES OF WATERS—CONTINUED.

(Parts per million.)

No.....	CITY.	Date. 1910.	N. in free NH ₃	N. in Alb. NH ₃	N. in NO ₃	N. in NO ₂	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed...
140	Arkansas City.....	7 9	0.160	0.228	trace	0.005	362.0	1,021	169	4.74
141	Atchison†.....	.....	.....	.....	.....	0.005	.....	.....	.....	.....
142	Altoona: Cooper....	8 12	0.080	0.100	11.0	trace	22.0	584	344	none
143	Belleville: Ice.....	5 19	0.360	0.580	none	0.001	3.0	38	22	3.60
144	Beloit: Ice.....	5 20	0.370	0.580	none	0.0005	6.0	201	118	8.04
145	Baldwin†.....	6 4	0.184	0.162	48.0	0.007	.....	1,290	629	.....
146	Caney: Seven samples*....	8 3	.....	.....	.....	.....	.....	.....	.....	.....
147	Chanute†.....	8 18	.....	.....	1.5	0.008	228.0	966	408	4.20
148	Coffeyville: (a) Test well.....	8 25	0.060	0.080	none	none	8.0	445	170	0.158
	(b) Verdigris.....	8 25	0.188	0.240	none	trace	3.2	300	123	3.67
149	Chapman: Well No. 3.....	8 16	0.120	0.198	none	trace	92.0	893	265	5.98
150	Caney:† (a) Wm. King....	9 2	.....	.....	2.0	0.001	40.0	1,060	303	4.93
	(b) J. A. Rader....	9 2	.....	.....	1.0	none	9.0	85	36	4.99
151	Columbus: (a) City well.....	9 15	0.220	0.110	none	none	59.0	500	113	5.76
	(b) Dead end.....	9 15	0.230	0.152	none	none	59.0	488	104	0.32
152	Coffeyville.....	9 26	0.020	0.018	none	none	none	13	6	.....
153	Cherryvale: Drum creek.....	10 6	0.260	0.260	0.3	0.002	27.0	345	76	4.067
154	Ellsworth.....	6 20	0.082	0.048	1.0	none	14.0	276	110	1.09
155	Elk City†.....	9 6	.....	.....	0.5	none	206.0	2,719	498	0.58
156	Ellis: (a) S. D. end....	10 6	0.184	0.178	0.3	0.002	17.0	327	121	2.27
	(b) M. D. end....	10 6	0.210	0.184	0.3	0.002	14.0	342	122	2.40
	(c) City well....	10 6	0.224	0.142	0.3	0.002	15.0	331	118	2.27
157	Hanover: Proposed supply.....	9 21	0.102	0.070	1.0	0.007	16.0	1,345	276	none
158	Homewood: School well.....	9 26	0.008	0.064	6.5	trace	19.0	363	146	1.41
159	Hiawatha†.....	9 26	.....	.....	0.6	0.010	10.0	343	123	0.19
160	Hanover: Proposed supply†.....	10 30	.....	.....	2.8	0.001	42.0	1,294	327	0.19
161	Hutchinson: K. S. I. R.....	10 3	0.080	0.060	6.0	0.001	132.0	702	198	0.80
162	Iola.....	5 31	0.096	0.202	none	none	81.0	712	224	5.16
163	Iola*.....	7 13	.....	.....	.....	.....	.....	.....	.....	.....
164	Independence: School Dist. 79†..	9 6	.....	.....	none	none	8.0	429	145	0.064
165	Jamestown.....	6 27	0.064	0.142	none	none	36.0	929	228	1.77
166	Jamestown†.....	7 27	.....	.....	none	none	25.0	.....	.....	0.75
167	Kingman.....	6 6	0.040	0.050	20.0	0.001	72.0	678	392	0.81
168	Lawrence: Dr. Sel- lards.....	5 14	0.236	0.196	53.0	0.070	139.0	1540	555	.....
169	Leavenworth: Mine water.....	5 24	0.044	0.102	none	none	.....	23,865	.....	10.10
170	Lawrence.....	6 18	0.092	0.180	0.5	0.003	168.0	1,022	297	5.06
171	Leavenworth: State Prison.....	8 19	0.154	0.230	0.5	0.007	15.0	491	187	2.69
172	Lawrence: 901 Ct.	9 19	0.030	0.122	64.0	0.020	235.0	2,647	780	3.88
173	Lawrence: (a) Mr. Littell...	10 5	0.080	0.132	16.0	trace	90.0	855	405	0.95
	(b) Mr. Allen....	10 5	0.104	0.120	32.0	0.001	52.0	678	242	1.05
174	Lawrence: (a) City wells...	10 7	0.096	0.650	0.3	0.003	46.0	485	180	3.68
	(b) Second set- tling basin.....	10 7	0.468	0.288	0.3	0.003	46.0	477	168	4.29
	(c) Tap water...	10 8	0.044	0.092	0.5	0.001	42.0	487	201	4.22
	(d) Tap water...	10 8	0.086	0.304	0.5	trace	45.0	496	183	4.51
175	Lawrence: Tripp Club well.....	10 8	0.072	0.228	0.7	none	36.0	362	212	3.42
176	Lawrence: Cistern,	10 10	0.280	0.194	none	trace	12.0	69	27	4.60
177	Lawrence: 942 Miss. St.....	10 11	0.080	0.124	30.0	0.002	50.0	571	261	0.06
178	Lawrence: Cistern, 133 Ky.	10 12	0.190	0.078	0.5	0.010	4.0	96	49	1.02
179	Lawrence: McCory, 1223 Ohio.....	10 13	0.188	0.082	20.0	0.007	58.0	949	315	0.72

SANITARY ANALYSES OF WATERS—CONCLUDED.
(Parts per million.)

No.....	CITY.	Date, 1910.	N. in free N H ₃	N. in Alb. N H ₃	N. in NO ₂	N. in NO ₃	Cl.....	Solids.....	Loss on ignition.....	Oxygen consumed....
180	Lawrence : Jno. Hyre.....	10 13	0.018	0.152	8.0	0.040	184.0	1,523	462	3.60
181	Mulvane: Proposed supply..	7 13	0.026	0.052	20.0	none	28.0	650	254	0.43
182	Marion: (a) Proposed sup- ply†.....	8 27	.....	.....	none	none	191.0	2,905	927	none
	(b) Proposed sup- ply.....	9 8	0.054	0.080	10.0	none	70.0	844	334	0.182
183	Medicine Lodge.....	9 16	0.068	0.184	none	none	21.0	205	61	22.33
184	Norton: City water,	7 21	.....	.....	0.2	0.004	30.0	484	220	0.169
185	Norton: School dis- trict No. 10†.....	8 27	.....	.....	none	none	7.0	409	121	5.92
186	Newton: City water,	10 8	0.014	0.058	0.5	none	14.0	278	94	0.06
187	Onaga: (a) Test well No. 1,	6 23	0.104	0.230	5.0	0.080	40.0	1,070	290	2.41
	(b) Test well No. 2,	6 23	0.110	0.244	5.0	0.020	20.0	802	236	3.25
188	Olathe†.....	7 7	.....	.....	60.0	0.001	172.8	1,471	.....	.....
189	Onaga: (a) Test well No. 1,	7 21	0.380	0.159	2.8	0.010	34.0	678	298	1.69
	(b) Test well No. 2,	7 21	0.170	0.158	2.0	0.020	32.0	619	268	3.51
190	Seneca: Proposed city supply.....	7 7	0.058	0.102	25.0	0.002	122.0	995	404	1.18
191	Speareville: Six sample†.....	8 30	.....	.....	.....	.....	.....	.....	.....	.....
192	Sycamore: School cistern.....	9 22	.....	.....	0.6	0.080	18.0	119	70	23.10
193	Speareville: (a) Lehigh well..	10 10	0.010	0.032	0.5	none	13.0	282	96	0.43
	(b) Weyand well..	10 10	0.018	0.032	0.7	none	14.0	300	105	0.72
	(c) City well.....	10 10	0.080	0.036	0.5	0.001	16.0	296	100	none
	(d) Dorsett well..	10 10	0.008	0.028	0.5	trace	15.0	286	105	0.06
	(e) Upp well.....	10 10	0.022	0.050	0.5	none	15.0	312	98	none
	(f) Nichol's well..	10 10	0.026	0.068	0.3	0.005	21.0	349	119	0.36
194	Tonganoxie*..	9 8	.....	.....	.....	.....	.....	.....	.....	.....
195	Willson: Proposed supply.....	6 27	0.020	0.076	12.0	0.001	22.0	325	134	1.75
196	Wellington: Pro- posed supply.....	8 5	0.130	0.170	2.8	0.002	157.0	1,581	544	1.60
197	Wa Keeney.....	9 28	0.014	0.046	0.4	none	10.0	258	98	0.64
198	Zenda: Callahan well†.....	10 10	.....	.....	none	none	12.0	257	94	3.40

* Special analysis. See page 255.
† Sample too small.

DETAILS.

138. Arkansas City. — (a) This water was sent in by W. S. Scruton, water-works superintendent. The organic matter in this water is not large. The mineral matter is rather high, but that is probably natural in most waters in this locality. About seven-tenths of the total solids was common salt.
139. Altoona. — These three waters were sent in to the laboratory at the request of Professor Hoad as proposed city supplies. (a) and (b) are very hard waters, and from a chemical standpoint unfit for supply. The amount of nitrites and nitrates should be investigated in (c) before the water is adopted for city supply.
140. Arkansas City. — This water was sent in by W. S. Scruton as an extension to the city supply.
141. Atchison. — This water was sent in by E. Ballinger. Sample too small for analysis.

142. Altoona.—This water was sent in at the request of Professor Hoad as a proposed city supply. Water was taken from the Cooper well. This is the best water for a city supply that has been received from Altoona.
143. Belleville.—Sample of ice sent in by Dr. Wm. Kamp, county health officer. The ice was taken from the Belleville ice pond. Analysis shows the ice to contain a large quantity of free and albuminoid ammonia; a much larger quantity, in fact, than is found in potable waters that are considered satisfactory. The amount of nitrites is also rather high. As far as chemical analysis can show, this ice appears to be entirely unsatisfactory for use in drinking water or any beverage.
144. Beloit.—Sample of ice sent in by Dr. Mary J. Lobdell. On account of the high oxygen consumed and large amount of free and albuminoid ammonia it is evident that this ice contains a large amount of organic matter. We do not consider this ice safe to use in drinking water or any beverage.
145. Baldwin.—Sample of water sent in by Sam Churchbaugh. The large amount of nitrates, nitrites, free and albuminoid ammonia indicate that this water is contaminated by nitrogenous organic matter.
146. Caney.—(See special analysis, page 249.)
147. Chanute.—Water sent in by W. W. Record, one and one-half miles east of Chanute. On account of the organic pollution indicated by the oxygen consumed, nitrites, and residue charring on ignition, it was suggested that this well be cleaned out and cemented up above the surface so that no surface drainage could enter.
148. Coffeyville.—These waters were sent in by Worley & Black as proposed city supply for Coffeyville. (a) Test well north of pump station; (b) Verdigris river.
149. Chapman.—This water was sent in by H. A. Knight. This is the third of a set of waters sent in by Mr. Knight in hopes that they could be found a satisfactory supply for the city of Chapman. The water contained a large amount of organic matter, which would bear investigation before the water is used as city supply.
150. Caney.—This water was sent in by Doctor Aldrich, county health officer. Suspected of typhoid infection. (a) Well of Mr. Wm. Kings; (b) well of J. A. Rader. Both of these waters seem to be contaminated with large amounts of organic matter; (b) is very soft, and from analysis appears to be a cistern water, or at least is as soft as an ordinary cistern water. As far as chemical analysis can show, these are not good waters.
151. Columbus.—These waters were sent in to the laboratory by G. R. Blake, mayor. (a) Water from well at pump station; (b) water from hydrant at end of line. Analyses were made to see what change there was in the water from the pump to the end of the line. The small change, as shown by analysis, is due almost wholly to deposit of suspended matter or turbidity in pipes. This turbidity is, to a large extent, organic matter.

152. Coffeyville.—Sample of water sent in by Gates Bottling Works. This is an aerated distilled water and appears to be a very good one. It was recommended to the company that a more thorough aeration be made before the water was put on the market.
153. Cherryvale.—This water was sent in by Geo. M. Seacat. The sample was taken from Drum creek in hopes that it might be used to eke out the city supply. This source should not be used unless the water is subjected to thorough purification by means of filtration.
154. Ellsworth.
155. Elk City.—This water was sent in by Chas. Hamilton, president of the school board. It is used by the school children as drinking water. There seems to be a very small amount of organic matter present. However, the water contains a large amount of solid matter, mostly sodium salts.
156. Ellis.—This water was sent in by Mr. J. H. Lee. (a) South dead end; (b) middle dead end; (c) water from well. There is considerable organic matter present in this water, as indicated by the free ammonia, nitrites and organic matter left in total solids on evaporation. An attempt is being made to improve the character of the supply.
157. Hanover.—This water was sent in by Professor Hoad, as a proposed city supply. It is rather high in mineral matter, and comparatively free from organic matter. The high nitrites may be caused by reduction of nitrates, iron in pipes, or in some similar manner.
158. Homewood.—Sample of water from school well, sent in by Dr. R. C. Leinbach. This water is rather soft and there is considerable organic matter present. It is suggested that this well be cleaned thoroughly and the curb cemented up so that all chance for surface drainage entering the well will be eliminated.
159. Hiawatha.—Sample of city water sent in to Professor Hoad by J. W. Leibengood. The cause of the high nitrites should be investigated at once.
160. Hanover.—Sample of proposed city supply sent in by Professor Hoad. This water is very similar to the other one from Hanover.
161. Hutchinson.—Water from the Kansas State Industrial Reformatory. Sample collected from their supply by F. M. Amrine, superintendent. This water does not seem to be seriously contaminated, but a bacteriological examination was suggested to Mr. Amrine in hopes that he could determine definitely whether or not the nitrites present were caused by the sewer, which passes within ten feet of the well.
162. Iola.—Sample of water sent in by Doctor Glen at the request of Professor Hoad. There is considerable organic matter present in this water.
163. Iola.—This sample was collected by Dr. H. R. Goshorn from the sewer of the Allen County Hospital. Statements had been made that the antiseptics and germicides used in the hospital were poisoning chickens when they drank the sewage, which runs off in a small creek. However, upon examination, no mercury, formalin or iodoform was found in the sewage.
164. Independence.—Water from well in school district No. 79, sent in by Dr. E. C. Wickersham. As far as chemical analysis can show, there is no trace of sewage pollution.

165. Jamestown.—Proposed city supply. Sample sent in at the request of Professor Hoad. This well is rather turbid, turbidity being 190. A sample from the same well, taken some weeks ago, had a turbidity of 1600.
166. Jamestown.—This is a sample from the same well, after longer pumping. The organic matter and turbidity are somewhat reduced.
167. Kingman.—This water was sent in by Dr. W. J. Albright. The nitrites and nitrates in this water are particularly high.
168. Lawrence.—Well, 1545 Massachusetts street. Sixty-five feet deep. Doctor Sellards.
169. Leavenworth.—Sample sent in by Doctor Carpenter. This is a mine water and should be classed with mineral waters, as it contains 23.865 gm. per liter of solids, mostly chlorides.
170. Lawrence.—Well, 820 Ohio street.
171. Leavenworth.—Water from State Penitentiary. Sample sent in by Warden Coddington. This water contained a large amount of organic matter, probably due to the fact that the water comes in contact with carboniferous shales underlying Leavenworth.
172. Lawrence.—Well, 901 Connecticut street, T. M. Graham.
173. Lawrence.—(a) Mr. Littell, 1617 New Hampshire street; (b) Mr. Allen, 1615 New Hampshire street.
174. Lawrence.—(a) Sample from waterworks trough immediately after lime is added to the water as pumped from the well; (b) water from second settling basin; (c) tap water, 19 West Adams street; (d) tap water, 201 East Winthrop street. The organic matter in these waters is undoubtedly due to the presence of algæ and crenothrix, which trouble the supply at this time of the year. No indication of sewage pollution is evident, as the chlorine has remained at approximately its present value for many years. The bacteriological department found that *coli* was not present in the water at the time these analyses were made.
175. Lawrence.—Tripp Club well, 1338 Ohio street.
176. Lawrence.—Cistern, Doctor Payne, 1300 Oread avenue. The cistern should be cleaned out.
177. Lawrence.—Well at 942 Mississippi street. Bacteriological examination made of this water showed definitely the presence of *Bacillus coli*. Five other wells in the same neighborhood also showed the presence of *coli*.
178. Lawrence.—Cistern of Mr. Lednicky, 1333 Kentucky street. This is a very good cistern water. The high nitrites may be attributed to the tin roof from which the water is collected.
179. Lawrence.—Well at 1228 Ohio street, Mr. McCorry.
180. Lawrence.—Well at 1032 Tennessee street, John Hyre.

Summary of Lawrence well waters.—A glance at the analyses of the wells at Lawrence shows, with one exception—that of the Tripp Club well—that the waters all contain considerable nitrites, nitrates, free and albuminoid ammonia. Bacteriological examinations of the wells show the presence of *coli* almost invariably. The Board of Health laboratory gave out the statement in Lawrence that wells should not be used for drinking purposes if city water was obtainable. If city water was not obtainable the waters

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used should be boiled in every case before drinking. A slight outbreak of typhoid fever the first week in October was checked by immediate abandonment of well waters for drinking.

181. Mulvane.—Sample sent in by the J. S. Worley Company, Kansas City, Mo., as proposed city supply. The sample was taken from the ice-plant well, from which they are now pumping 200,000 gallons daily. The high nitrates in this water make it of doubtful value as a city supply.
182. Marion.—(a) Public-utility commissioners sent in this water as proposed city supply. This is a very hard water, the total solids being mostly calcium and sodium sulphate. It is so hard, in fact, that it is unfit for pipe-water supply; (b) water sent in by G. P. Marner at the request of Professor Hoad as proposed city supply. This is a rather hard water, and as far as chemical analysis shows there is no trace of pollution.
183. Medicine Lodge.—Sample sent in by B. Stockstill at the request of Professor Hoad as proposed city supply. This is a rather soft water and would undoubtedly make a good city supply.
184. Norton.—City water sent in by Dr. C. S. Kenney. The high nitrites render this water suspicious, and some form of purification should be used.
185. Norton.—Sample of water from school district No. 10 sent in by Dr. C. S. Kenney. This water has a large amount of organic matter, and a thorough cleaning up and cementing of the curb was suggested. Another analysis will be made after this has been done to see if the organic matter came from surface drainage.
186. Newton.—Filtered city water sent in by Fred Harvey to see if the water was satisfactory to use in the dining-car service. As far as chemical analysis can show this water is not contaminated.
187. Onaga.—These waters were sent in at the request of Professor Hoad as proposed city supply.
188. Olathe.—Sample of water sent in by Sam Dunning, R. F. D. No. 4. The large amount of nitrates and nitrites in this water render it suspicious. This is a very hard water, the solids being mostly sulphates.
189. Onaga.—(a) Test well No. 1; (b) test well No. 2. Proposed city supply sent in at the request of Professor Hoad. The high nitrites make these waters suspicious. The residue charred slightly on ignition.
190. Seneca.—Proposed city supply. Sent in by J. H. Cohen at the request of Professor Hoad. The nitrites and nitrates make this water suspicious. A further investigation should be carried on before the water is adopted for city supply.
191. Speareville.—These six waters were sent in by H. W. Dorsett. These samples were too small for analysis, the only determination possible to make being that of chlorine. They were all very low, with the exception of the town well, which is the highest, no evidence of pollution seems to be indicated, *i. e.*, after comparison with complete analysis made later:

(a) Town well,	chlorine, 13 parts per million.
(b) Leidigh well,	" 14 " " "
(c) Upp well,	" 16 " " "
(d) Mace well,	" 23 " " "
(e) Nichols well,	" 22 " " "
(f) Dorsett well,	" 20 " " "

192. Sycamore.—Sample of water from school cistern sent in by W. O. Ellison. The large amount of organic matter in this cistern indicated that the water had not been collected carefully. It was suggested that the cistern be cleaned out at once before using as drinking water.
193. Speareville.—These waters were sent in by H. W. Dorsett. Analyses show them all to be similar in character. The only ones having any trace of pollution are (c) and (f), the nitrites in these cases indicating that there might be some serious pollution.
194. Tonganoxie.—(See special analysis, page 250.)
195. Wilson.—Water sent in at the request of Professor Hoad, as proposed city supply. The cause of the high nitrites and nitrates should be explained before the water is approved as city supply.
196. Wellington.—Water sent in by W. J. Newbold at the request of Professor Hoad.
197. Wa Keeney.—Sample sent in by A. S. Peacock at the request of Professor Hoad, as proposed city supply. This is a rather soft water. As far as chemical analysis can show it is not polluted. If the supply is sufficient for the demands of the town, there seems to be no reason why it should not be used as such supply.
198. Zenda.—D. F. Callahan sent in this water from his well. As far as chemical analysis can show it is not polluted.

SPECIAL ANALYSES.

Arkansas City.—Sample of boiler water sent in by W. S. Scruton; sample taken from city supply. The analysis follows (results expressed in parts per million):

Turbidity.....	Clear.
Nitrogen as nitrates.....	Trace.
Total solids.....	960
Loss on ignition.....	266
Fixed residue.....	694

Composition calculated from determinations:

Sodium chloride.....	356 4
Sodium sulphate.....	187.1
Magnesium carbonate.....	70.5
Calcium carbonate.....	212 2
Calcium sulphate.....	82 08
Silica.....	13 6
Iron and aluminum oxides.....	1.
Total.....	922.83

Caney.—Following are partial analyses made of samples of water sent in by Doctor Aldrich from Caney, Kan.:

- Lab. No. 4038, city hydrant.
- " " 4039, tap inside pumping station.
- " " 4040, from river at waterworks.
- " " 4041, junction of Birch and Lake creeks.
- " " 4042, Lake creek one mile from refinery.
- " " 4043, Lake creek one-half mile from refinery.
- " " 4044, Lake creek below refinery dam.

	4038	4039	4040	4041	4042	4043	4044
Odor.....	H ₂ S	Oil.	H ₂ S	Oil.	H ₂ S and oil.	.....	Oil.
Turbidity.....	16	32	80	12	120	30	120
Total solids ...	431	340	332	737	1276	1735	1057
HCO ₃	173.2	180.6	158.6	.....	.....	.....	.....
H ₂ SO ₄.....	.....	.....	.....	25.25	52.25	766.2	69.75
Oil.....	6	7	5	2	3	4	1

The figures after the column marked oil indicate the relative quantity of oil on the surface of the sample, No. 1 having the greatest amount. From examination of these partial analyses it will be seen that the refinery waste is undoubtedly the cause of this oil pollution, and, although the sulphuric acid is neutralized before reaching the Caney intake, the hydrogen sulphide probably comes from reduction of sulphates by the organic matter in the water. Steps should be taken to protect the Caney supply from this pollution.

Tonganoxie.—The following are the analyses of creamery waste and creek into which the waste is emptied. These samples were brought in by Professor Hoad from Tonganoxie. Samples received September 8; analyses completed September 16, 1910. Results expressed in parts per million. No. 1 is waste from plant 2; No. 2, waste from plant 1; No. 3, creek above dam at plant 1, normal creek water; No. 4, creek after waste of plant 1 has been introduced; No. 5, waste from plant 3; No. 6, creek after waste from all plants has been introduced.

	No. 1. 4098	No. 2. 4099	No. 3. 4100	No. 4. 4101	No. 5. 4102	No. 6. 4103
Odor.....	putrid	putrid	....	putrid	putrid	putrid
Total N.....	50.0	700.0	8.00	10.00	600.00	9.00
N. as nitrites.....	trace	none	.007	.001	.01	trace
N. as nitrates.....	none	none	.80	none	none	none
Oxygen consumed...	105.9	1,590.4	5.59	34.34	2,183.90	23.97
Acidity with phenolphthalein calculated to lactic acid,	137.75	3,980.6	....	61.75	2,170.75	40 85

From a glance at these analyses the pollution of the stream is very obvious and the slight amount of lactic acid that is free in the water, as shown by No. 6, would be fatal to fish.

At the Hutchinson meeting of the State Board of Health a special order was passed whereby the three creameries should not empty waste into the creek. The creameries were served with the order and are making provision in their construction to comply with the order at once.

The so-called "cold" is contagious.

The national defense calls for the highest efficiency of each citizen, hence health is our first and most important asset.

The National Association for the Study and Prevention of Tuberculosis declares that the fake consumption cures cheat the public out of \$15,000,000 annually.

The epoch-making discoveries of Cotton & Schroeder relating to dairy products from tuberculous cows, and the brilliant experiments of Mohler and others on the metamorphosis of bovine bacilli into the human type, which experiments have but recently been confirmed by the United States Bureau of Animal Industry, emphasizes the importance of requiring all dairy animals to pass the tuberculin test.

Experimental Researches in Tuberculosis, with Special Reference to Etiology, Pathology and Immunity.

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Activities which belong to the field of medical science may be grouped into researches concerned with the nature and causation of pathologic phenomena, and those concerned with the application of the knowledge disclosed to the prevention and treatment of disease.

To trace these activities over a definite geographic area, such as a state, is difficult, for research in any subject which concerns the population of the world goes on simultaneously in many places. The stream of research activities is continuous only when we bring into our view the entire civilized world. When we view a small territory, it is more like examining separate brooks having no connection with one another, which, however, eventually contribute to the main stream. These researches emanate largely from laboratories, and are experimental in character. They differ from those of practical medicine only in so far as the conditions under which the special problems of disease are being investigated are either known, or else controlled or carefully balanced by unknown factors of presumably equal value. This use of controls is the more extended, the larger the number of unknown elements which enter into the problem. It is either impossible, or possible only through the use of statistics or the accumulation of numbers of cases, that the practice of medicine can control its work. Beyond this there is no fundamental distinction, nor even any sharp dividing line between experimental and clinical medicine. One insensibly shades into the other by gradations. The hope of continued and greater success in the limitation of disease lies in slowly pushing the methods of experimental medicine into clinical work. This has been going on to a very large extent by the development of hospital laboratories. Laboratory activities on a large scale are co-extensive with the modern era of bacteriology, and this in turn has as its chief starting point the discovery of the tubercle bacillus by Koch in 1882.

These activities are grouped in the main around three epochs in the development of our knowledge of tuberculosis—the discovery of the tubercle bacillus, the introduction of tuberculin as a curative and diagnostic agent, and the differentiation of the races of mammalian tubercle bacilli provisionally into human and bovine. Each event acted as a stimulus, aroused the waning interest in the nature and activities of the tubercle bacillus, and supported the flagging hope for the discovery of some easily applied curative or immunizing agent.

The period preceding the discovery of the tubercle bacillus was devoted chiefly to the macroscopic and microscopic study of the tubercle, and to

speculations concerning its origin and nature. Though the infectious properties of tuberculous matter had been demonstrated by Klencke in 1843 and again by Villemin in 1865, yet the conception of infection from without with reference to this disease did not seem to flourish or to lay hold of medical thinking.¹

Among the writings emanating from Massachusetts during the period preceding the discovery of the tubercle bacillus perhaps one may be mentioned, as it is based upon macroscopic and microscopic examination of tuberculous and other tissue from 16 cases. I refer to the Boylston prize essay of Calvin Ellis, entitled "Tubercle: Its Pathology, and especially its Relation to Inflammation."² Ellis described the macroscopic and microscopic characters of "gray and yellow" tubercle, its chemical characters and metamorphoses. He discussed its distribution in the body and the diseases which are incompatible with it. With the aid of quotations from the writings of Virchow, Reinhardt and Spiess, he analyzes the tuberculous process and comes to the following conclusions:

It [tubercle] is not a specific exudation.

It does not exist as such in the blood.

The yellow variety is always the result of metamorphosis—of degeneration.

It is altogether probable that it is owing to a "degraded condition of the nutritive material," which differs from that furnished under ordinary circumstances, "not in kind, but in degree of vitality or capacity for organization."

The selection and grouping of publications emanating from Massachusetts since the discovery of the tubercle bacillus has been a task of considerable difficulty. Only those papers have been chosen which presented evidence of laboratory work done, as contrasted with clinical work, to support the statements made and conclusions reached. This rule of choice reduced the available material to a relatively small amount.

As regards the order of presentation, it was found impracticable to deal with the publications chronologically or with reference to the three epochs mentioned above, and it was deemed best to bring together those which are logically related to one another.

The review of each paper has been purposely made short, and the author's conclusions cited wherever possible. Critical comments have been withheld excepting where the results were open to doubt and at the same time of great practical significance. The writer has a vague presentiment that papers have been overlooked which should have been included in this chapter's summary, but he hopes that the neglected authors will be lenient with him for his shortcomings.

ETIOLOGY OF TUBERCULOSIS.

The Morphology and Biology of the Tubercle Bacillus.

The early work on the relation of the tubercle bacillus to tuberculosis, its morphology and cultivation and the methods used for staining it, was designed largely to repeat and confirm the original work of Koch,

1. R. H. Fitz, "The Theory of Tuberculosis," Massachusetts Medical Society, 1871.

2. American Journal Medical Sciences, 1860, N. S., XXXIX, 339.

and to acquaint the medical profession with the laboratory methods used by him and the inferences and conclusions drawn by him from his experiments. This period has little originality to show. The progress made by Koch over his contemporaries in almost everything undertaken by him, his original and advanced points of view and his new methods of research left all far behind. Koch had so thoroughly covered the field that it required years to discover any untilled corners. Moreover, laboratories were just being created. Apparatus had to be improvised, contrived or newly invented to meet the sudden expansion of bacteriological methods.

Harold C. Ernst³ describes his experience with the different staining methods then in use and gives formulæ for each. He gives his preference to the Koch method. He also describes the method for procuring pure cultures of the bacillus of tuberculosis, following Koch's directions as closely as possible, and cites a list of the pathological material submitted to microscopic examination. Guinea pigs were also inoculated. The entire work is in a sense a repetition and confirmation of a portion of Koch's original investigation.

E. W. Cushing⁴ gives an exhaustive summary of Koch's original monograph on the bacillus of tuberculosis. In a second paper⁵ an account of the methods of staining the bacilli and the manipulation of the microscope for their detection is given.

A similar paper was published by W. F. Whitney.⁶

The pathology of cutaneous tuberculosis was discussed by John T. Bowen⁷ with special reference to miliary tuberculosis of the skin, scrofuloderma, lupus and tuberculosis verrucosa cutis. The pathological anatomy of these lesions is carefully described with reference to the primary seat of the lesion, the formation of the specific tuberculous tissue, the degenerations and regenerations associated with it.

A similar paper was published by C. J. White⁸ in 1905. Dr. White's treatment of the subject approaches the clinical, and is descriptive of the various well-determined and debated forms of skin tuberculosis. Inasmuch as the descriptions are limited to the naked-eye appearances, the paper belongs more properly among the clinical contributions.

The resistance of tubercle bacilli to destruction by drying has been of great interest to sanitarians, in view of the current theory that pulmonary tuberculosis is largely an inhalation disease.

In 1890 A. K. Stone⁹ tested on rabbits three lots of sputum in which tubercle bacilli had been demonstrated about three years before. The sputum remained on "the laboratory shelves quiet and undisturbed" during this long period. When it was used upon rabbits, the sputum was represented either by a little dry dust or else by a hard brown crust covering the bottom of the jar. The notes on the inoculated rabbits

3. American Journal Medical Sciences, 1884, LXXXVIII, 367.

4. Boston Medical and Surgical Journal, 1885, CXIII, 533.

5. *Ibid.*, 1886, CXIV, 277.

6. "The Etiology of Tuberculosis," Riverside Press, Cambridge, 1882.

7. Boston Medical and Surgical Journal, 1891, CXXV, 516.

8. Boston Medical and Surgical Journal, 1905, CLIII, 291.

9. American Journal Medical Sciences, 1891, CI, 275.

suggest local tuberculosis of limited extent. The proof that tubercle bacilli may survive so long under the conditions mentioned should have been strengthened by either cultures or subinoculations from the original rabbits, since the results are at variance with those of other investigators.

The thermal deathpoint of tubercle bacilli was investigated by the writer¹⁰ primarily to determine any possible differences in this respect between the human and bovine types. No differences were discovered, but earlier observations were rectified by demonstrating that the tubercle bacillus is killed in fluids by twenty minutes' exposure at 60° C., and that former discrepancies are accounted for by the fact that in milk a pellicle forms which protects the bacilli from the heat. By heating milk in closed vessels this difficulty is eliminated.

TUBERCULIN.

Infection and Immunity.

The second era or epoch in the investigation of tuberculosis was ushered in with the announcement in 1890 that a cure for tuberculosis had been discovered by Koch. Again a number of publications appeared, but they were chiefly the results of observations made on patients to test the statement of Koch that tuberculin was curative. Slowly the tide turned against this new substance, for good and obvious reasons, for Koch had simply discovered what would now be called an instance of anaphylaxis or the sensitization of the human being, by virtue of infection, to certain extracts of the tubercle bacillus. The immense impetus given to research by this and the nearly contemporaneous discovery of antitoxin by von Behring brought into the foreground for investigation the problem of immunity, of which the tuberculin reaction was but a fragment. This great problem, long nurtured by the genius of Pasteur, slumbered elsewhere until awakened by these great discoveries. Even after seventeen years, immunity still presents subsidiary problems of the greatest importance to the science of biology and to the practice of medicine.

Belonging to this period there is one paper which should be mentioned here. J. A. Jeffries¹¹ made extracts of tubercle bacilli with alcohol, ether, chloroform and benzol, as well as glycerine. Tuberculous guinea pigs were made very sick with the latter. The series of experiments was interrupted by an accident. This paper was in line with Koch's work, but unfortunately was not completed.

Among the papers belonging to this chapter, but published at a much later date, the following embody considerable laboratory work. A painstaking investigation on the effect of tuberculins made from human and bovine tubercle bacilli was published by S. B. Wolbach and Harold C. Ernst¹² in 1904. Cultures were freshly isolated directly from the respective hosts, and tuberculin made in the usual way. The relative virulence of the human and the bovine culture was first determined in rabbits and guinea pigs. The tuberculins were next tested on tuberculous guinea pigs, and it was found that both acted alike upon guinea pigs

10. Journal Experimental Medicine, 1899, IV, 217.

11. Boston Medical and Surgical Journal, 1891, CXXVI, 185.

12. Journal Medical Research, XII, 295.

infected with human or bovine bacilli. Finally, inoculated guinea pigs were treated with small doses of tuberculin. Eighteen were inoculated with human and an equal number with bovine bacilli. One-half of each set was treated with human, the other half with bovine, tuberculin. The results were more or less conflicting, but it was noticed that many treated guinea pigs gained in weight and in some the local ulcer healed. The contents of the local inoculation abscess also discharged more rapidly and completely in the treated than in the control animals. The inference was that the tuberculin treatment on the whole acts favorably upon tuberculous guinea pigs.

In a paper presented before the Harvey Society of New York, the writer¹³ goes into the subject of infection and immunity in tuberculosis. He discusses the portals of entry, and points out the fact observed by him in a large number of autopsies in 1893, that in cattle the primary foci of infection are the regional lymph nodes of the throat, the lungs and the small intestines, and only very rarely the organs or mucous membranes through which the bacilli must pass to the lymph nodes. The action of dead tubercle bacilli and of tuberculin is discussed on the basis of a large series of experiments on guinea pigs by him, and the earlier experiments of Straus, Prudden and others. Lastly, the problem of vaccination with tubercle bacilli killed at 60° C. is taken up and recommended as a means of suppressing the disease.

In recent years the suppression of bovine tuberculosis by means of vaccination has been strongly advocated by von Behring, and a method developed by him on a commercial scale which has been applied in many countries. The desire to obtain first-hand information concerning the efficacy of this method led the Massachusetts Society for Promoting Agriculture to grant the writer a certain sum of money to carry on a series of vaccination tests on calves.¹⁴

The outcome of these investigations demonstrated, as had been done by Koch and co-workers in Germany, that almost any human type of tubercle bacillus could be used in place of the bovine vaccine, and that the vaccine could be easily and cheaply prepared by those who were acquainted with the chief characters of the human tubercle bacillus. It was also clearly shown that the immunity due to two injections of suspensions of human bacilli is not quite high enough, and the writer suggests for valuable animals a third injection of attenuated bovine bacilli.

PUBLIC-HEALTH ASPECTS OF TUBERCULOSIS.

Transmission from Man to Man and from Animals to Man.

The presence of tubercle bacilli in the milk of tuberculous cows with apparently normal udders was investigated by Harold C. Ernst,¹⁵ assisted by Drs. Austin Peters, Henry Jackson and L. Frothingham. Tubercle bacilli were seen in coverslip preparations of the milk of 12 out of 36 cows. By inoculation of guinea pigs, tubercle bacilli were detected in the milk of 6 out of 15 cows. By the inoculation of rabbits, the milk of 4 out of 19 cows was found infected with tubercle bacilli. Feeding experiments

13. Journal American Medical Association, 1906, XLVI, 1247 and 1345.

14. Journal Medical Research, 1908, XVIII, 451.

15. American Journal Medical Sciences, 1889, XCVIII, 439; "Infectiousness of Milk," 1894, 141, 17 plates.

were also instituted on a large scale with calves, pigs and rabbits, with results corroborating those obtained by inoculation.

At the same time samples of milk and cream from the supply of the city of Boston were subjected to microscopic examination and inoculation. The results were as follows: In 33 samples, tubercle bacilli were detected with the microscope once, and three times in inoculated rabbits. The rest of the volume contains letters from practitioners bearing upon clinical observations of tuberculosis traceable to the milk supply. As this portion is of clinical rather than scientific value, it does not come within the scope of this chapter. The conclusions reached by the author are as follows:

1. While the transmission of tuberculosis by milk is probably not the most important means by which the disease is propagated, it is something to be guarded against most carefully.

2. The possibility of milk from tuberculous udders containing the infectious element is undeniable.

3. With the evidence here presented, it is equally undeniable that milk from diseased cows with no appreciable lesion of the udder may, and not infrequently does, contain the bacillus of the disease.

4. Therefore, all such milk should be condemned as food.

Dr. F. T. Lord contributes an important article on flies and tuberculosis.¹⁶ As the result of laboratory experiments with flies, in which feeding of sputum was practiced and the fly-specks studied, the following conclusions were reached:

1. Flies may ingest tubercular sputum and excrete tubercle bacilli, the virulence of which may last at least fifteen days.

2. The danger of human infection from tubercular fly-specks is by the ingestion of the specks on food. Spontaneous liberation of tubercle bacilli from fly-specks is unlikely. If mechanically disturbed, infection of the surrounding air may occur.

As a corollary to these conclusions, it is suggested that:

3. Tubercular material (sputum, pus from discharging sinuses, fecal matter from patients with intestinal tuberculosis, etc.) should be carefully protected from flies, lest they act as disseminators of the tubercle bacilli.

4. During the fly season, greater attention should be paid to the screening of rooms and hospital wards containing patients with tuberculosis, and laboratories where tubercular material is examined.

5. As these precautions would not eliminate fly infection by patients at large, food stuffs should be protected from flies that may already have ingested tubercular material.

THE INTERRELATION OF HUMAN AND ANIMAL TUBERCULOSIS.

Variation among Tubercle Bacilli.

The identity of tubercle bacilli isolated from cattle and man had been regarded as definitely established by the great work of Koch published in 1884. Ten years later, sanitary measures based upon this assumed identity and the discovery of tuberculin as a diagnostic agent were in force in all civilized countries. In some the zeal to wipe out bovine tuberculosis obscured for a time the more important issue of the transmission of tuberculosis from man to man, when it became known through the use of tuberculin to what extent cattle were infected with tubercu-

16. Boston Medical and Surgical Journal, 1904, CII, 651.

losis. The discovery of Maffucci, that the tubercle bacillus of birds was a distinct race or variety, had been accepted by Koch himself.

That bovine and human bacilli are not identical had occurred to the writer in studying the inoculation disease in guinea pigs. In 1894-'95 two cultures, one from cattle, and one presumably, though indirectly, of human origin, were studied in Washington, D. C., and tested in cattle, and such great differences discovered that further studies were at once begun. This first communication was not published until 1896, but the subject began to arouse some interest and considerable opposition. L. Frothingham¹⁷ investigated the subject for the Massachusetts Cattle Commission, and published his results in 1897.

A culture of human bacilli was used, isolated from the liver of a child, and about one year old. Two calves, three months and three weeks old respectively, received suspensions of the culture into the peritoneal cavity. In both only slight local nodules were produced, some resembling spontaneous tubercle, others tending towards granulation tissue. Two calves, three weeks and two months old respectively, were inoculated into the trachea. In one case the large local abscess in the muscles of the neck indicated a deposit there of much of the material destined for the lungs. In the liver and lungs a small number of minute tubercles, practically devoid of tubercle bacilli, were found. In the other calf lesions were absent. Thus, in spite of the immature age of these animals, the tubercle bacillus may be said to have had but a trifling local effect on them. The tests on guinea pigs indicate a very attenuated culture.

In a second experiment human sputum containing many bacilli was inoculated under the skin of one calf and into the trachea of two others. The animals were killed four to five months after inoculation. The subcutaneous inoculation was apparently negative. In the others the lungs were normal, the muscular tissue around the trachea was slightly involved, but there was no active, progressive disease from this focus.

From present knowledge of the effects of bovine tubercle bacilli on young calves, we may say that neither the pure culture nor the sputum inoculated by Frothingham contained bovine bacilli.

In 1898 the writer¹⁸ published the second paper on the comparative study of human and animal tubercle bacilli. This investigation included seven cultures from man, five from cattle, and one each from a pig, a cat and a horse. It consisted of a study of the morphological and cultural characters of the bacilli, of their pathogenic action on guinea pigs, rabbits, mice, pigeons and cattle, and of the histological character of the lesions produced. Throughout an effort was made to have the study of cultures from human and bovine sources run parallel. Only in this way could any satisfactory basis for comparison be established.

Inasmuch as in this paper the writer has formulated nearly all the problems which have since then occupied the attention of investigators in many countries, its contents are best reviewed by a few direct quotations:

The foregoing experiments, while they show unmistakably the close

17. Annual Report Board of Cattle Commissioners of the Commonwealth of Massachusetts, January, 1897, 49. Translated in *Ztschr. f. Thiermedizin*, 1897, I, 330.

18. *Journal Experimental Medicine*, 1898, III, 451.

relationship existing among the various cultures studied, nevertheless justify us, if only to guide and stimulate further study, in establishing a distinctively human or sputum and a bovine variety of the tubercle bacillus. It might be better to omit the host designation of such varieties, in order to anticipate assumptions that they are necessarily limited to the host whose name they bear. Still, the convenience of using the host's name is so great that I shall succumb to it. The characters upon which the bovine variety may be based reside, morphologically, in the invariably short, straight form and in the greater resistance of this form to modifying influences of culture-media; biologically, in a greater resistance to artificial cultivation and in a much greater pathogenic activity towards rabbits, guinea pigs and cattle.

There is proof, furthermore, of the existence of slightly varying characters even within the varieties proposed. Among the bovine forms studied, slight variations in virulence were noticeable. Among the sputum forms, variations in size, in capacity for cultivation, and in pathogenic activity have been observed.

Putting all the facts obtained by experiments upon cattle together, it would seem as though the sputum bacillus cannot gain lodgment in cattle through the ordinary channels. These avenues, well provided with protective mechanisms, receive the bacilli probably one at a time. However closely the sputum and the bovine bacillus may be related, it seems as if under ordinary circumstances the former would fall an easy prey to destruction. This inference will gain in weight if we bear in mind that the far more potent bovine bacillus produces in at least 50 per cent of the spontaneously infected cattle a purely local disease, which probably would remain so if the animal were surrounded with favorable conditions.

The second and most important proposition, the transmission of bovine bacilli to the human subject, has been much discussed in recent years, without, however, bringing us any nearer to definite knowledge.

If bovine bacilli may invade the human body without let or hindrance, we have not only food infection through milk and milk products to guard against, but also the inhalation disease to which men are exposed in stables containing tuberculous cattle. What proportion of tuberculous subjects may derive their infection from these sources we do not know. Now that we have established some fairly pronounced differences between bovine and sputum bacilli, the whole discussion might be cut short by the suggestion that the time has come to stop citing old and doubtful cases, and to go to work to study with care the tubercle bacilli from cases of supposed animal origin, so that some experimental trustworthy basis may be formed upon which to found statistics.

While this is in truth what will have to be done, and is the goal which has been aimed at from the outset in this tedious work, it will take much time and persistent attention to collect evidence of this kind. In the meantime, the relation of bovine to human tuberculosis must be somehow defined before a fairly helpless and frightened public. It seems to me that, accepting the clinical evidence on hand, bovine tuberculosis may be transmitted to children when the body is overpowered by large numbers of bacilli, as in udder tuberculosis, or when certain unknown favorable conditions exist. To prevent this from occurring, a rigid periodic dairy inspection and the removal of all suspicious udder affections and all emaciated animals is as much as public health authorities can at present demand. Any measures beyond these belong to agriculture, with which the public health has no business to meddle, without endangering the chances of gaining authority to enforce its own necessary measures. If the evidence gained by pathology in the future should reveal a greater danger than is here assumed, the scientific basis of such evidence will, I think, force all additional measures needed.

But for the student of etiology the problem does not end in the differentiation of varieties. It reaches out much farther than this, and involves some puzzling questions. The most important one bears on the possible changes which the tubercle bacillus may undergo during its

prolonged sojourn in the human body. I have already referred to one phase of this question in mentioning the saprophytic growth of the sputum bacillus in the affected lungs and necrotic tissue, as contrasted with its slight multiplication in living tissue and with the generally slight multiplication of the bovine bacillus in the tissue of cattle. This question is a very complicated one, and nothing is easier than to reason in a circle about it, because of the entire absence of data. The first hypothesis to be considered is that which assumes the conversion of the bovine bacillus into the sputum bacillus in the human body.

The question of phthisis as secondary to infection by way of the digestive organs is, however, one needing more attention, for experimental results in this direction are quite suggestive. In all mammals the lungs are evidently the most favored place of tubercle bacilli, and wherever the latter may be deposited; they sooner or later, unless the disease is checked, reach that organ, where the process spreads more rapidly than elsewhere. This march from the place of infection is not infrequently partially concealed by reparative processes.

With the two facts before us that tubercle bacilli gravitate, as it were, towards the lungs in all the susceptible mammals, and that they may conceal their movements in the body quite effectually, we must regard infection through the digestive tract as a source of phthisis at least deserving more attention. The only question to interest us here is the relation of the bovine bacillus to this process.

Only much painstaking work will enable us to learn whether the human body can produce such a great modification of the bovine bacillus or not.

If in this brief summary I have presented nothing but problems to be solved and doubts to be entertained, I feel quite confident that the comparative study of tubercle bacilli will lead to some definite understanding on certain important questions, and eventually to more light on the whole subject of tuberculosis, from the preventive as well as the therapeutic side.

The main questions proposing themselves to the investigator are:

1. The study of tubercle bacilli from different types of tuberculosis, to determine their relation to the sputum bacillus and the bovine bacillus as regards virulence.

2. The study of the bacilli in primary intestinal disease and in all tubercular disease in children in which the source of infection is assumed to be outside of the family and possibly in the milk.

The work of studying tubercle bacilli from different sources was continued as opportunity presented itself until 1907. It was then taken up in the writer's laboratory by Dr. P. A. Lewis, who has succeeded in isolating and studying from all points of view cultures from 15 cases of tuberculous cervical and mesenteric lymph nodes in children. As this work will probably appear before the close of the present year (1908), further comment is unnecessary. In the papers of the writer¹⁹ which have thus far appeared, there have been studied, in all, 24 human, 9 bovine, 3 cat, 1 dog, 2 swine, 1 horse and 1 Coati culture. Among the 24 cultures from man, 5 were regarded as of bovine origin. Two of these were from mesenteric lymph nodes, 3 from tonsils and cervical lymph nodes.

19. Notes on a tubercle bacillus having a low degree of virulence, *Journal Boston Society Medical Sciences*, November, 1898. Studies in mammalian tubercle bacilli, III, *Transactions Association American Physicians*, 1903, and *Journal Medical Research*, 1905, XIII, 253. A study of tubercle bacilli isolated from three cases of tuberculosis of the mesenteric lymph nodes, *American Journal Medical Society*, 1904, August. Studies in mammalian tubercle bacilli, IV, *Journal Medical Research*, 1907, XVI, 435 (with Mr. Herbert R. Brown). The reaction curve of tubercle bacilli from different sources in bouillon containing different amounts of glycerin, *Journal Medical Research*, 1905, XIII, 405.

In one of the papers a reaction is described which enables us to divide all tubercle bacilli into two classes: First, those which produce a final alkaline or neutral reaction to phenolphthalein in glycerin bouillon; and second, those which produce a final acid reaction. Bovine cultures thus far examined have belonged to the first group, most human cultures to the second. Those human cultures which belonged to the first group possessed also other characteristics of the bovine type, and the infection of the cases was assumed to be from the milk.

The existence of varieties of the human tubercle bacillus as well as of the bovine bacillus was observed by the writer, and by all investigators who studied carefully series of cultures. This subject of variation among tubercle bacilli is reviewed by the writer²⁰ in a general way in a short paper in 1899.

The relation existing between bovine and human tuberculosis is one of great importance to the public health, because of the excessive use of cows' milk in infancy and in various states of disease and invalidism. The writer²¹ summarized the relationship as deducible from reports of investigations in 1902 and 1907.

In these papers he takes a middle ground—that there is danger from cows' milk containing tubercle bacilli, but that the danger has been overestimated. Under the existing conditions he advises thorough sanitary inspection of dairy herds and the eliminating of all cows showing wasting and any doubtful udder affection. In the second paper arguments drawn from comparative pathology and bacteriology are presented to combat the theory of the modification of the bovine into the human type of tubercle bacillus in the human body, and also the tendency to regard pulmonary tuberculosis as started chiefly by bacilli absorbed from the digestive tract. He urges the need of more investigation to clear up definitely the controverted points.

Studies on the morphology of the tubercle bacillus from human and bovine sources were published by S. B. Wolbach and Harold C. Ernst.²² By planting cultures on a variety of media, and examining at different intervals of time, they came to the following summary:

1. The tubercle bacillus undergoes marked changes in morphology with change of culture medium.
2. The microscopic characteristics of a fully developed culture are fairly constant for each medium.
3. Growth for several generations on a given medium has not tended to impart fixed characteristics, the change in form being just as prompt and complete as when transferred after a single generation.
4. These changes cannot be explained by assuming that the sole difference is in the favorability of the medium for the growth of the tubercle bacillus. Both Dorset's egg medium and the brain medium must be classed as extremely favorable ones; growth on each appears at about the same time and progresses about equally rapidly. The reaction of the medium also does not explain these changes, as the different media may have precisely the same reaction and yet these changes occur.
5. The greatest variations in form and staining reaction are found in rapidly growing cultures, and we agree with Coppen-Jones in regard to

20. Boston Medical and Surgical Journal, 1899, January 12.

21. The Medical News, 1902, LXXX, 343; The Boston Medical and Surgical Journal, 1907, CLVII, 240.

22. Journal Medical Research, 1903, X, 313, 13 plates.

the conditions best suited for the production of branched and filiform forms, namely, a favorable medium and free access to oxygen.

6. The only interpretation of the great diversity of form assumed by the tubercle bacillus when grown under the most favorable conditions is that it is truly pleomorphic, and should be classed among the higher bacteria.

A similar investigation was made by the writer²³ chiefly for the purpose of finding additional methods for distinguishing the human from the bovine type of bacilli. The impulse to the study was given by the change in the form of bovine tubercle bacilli observed in impure cultures. As soon as the culture was purified the bacilli assumed their original short form. The probable explanation of the phenomenon observed is the softening and increased stickiness of the outer layer or capsule of the bacilli in the impure culture, perhaps under the influence of some bacterial enzyme.

The Cost of Tuberculosis.

The following, from the Bulletin of the Indiana State Board of Health, most graphically portrays the economic loss to the state from a preventable disease, and incidentally gives us a glimpse of an annual tragedy that is being enacted in Kansas and every other state in the Union:

THE STATE OF INDIANA, A. D. 1909.

THE PEOPLE OF INDIANA, TO PREVENTABLE TUBERCULOSIS, *Dr.*

To Lives and Devastated Homes :

Item 1. Number of deaths from tuberculosis.....	4,479
Item 2. Number of homes invaded.....	3,866
Item 3. Homes broken up by loss of father or mother.....	2,180
Item 4. Dead mothers between ages of 18 and 40.....	1,286
Item 5. Dead fathers between ages of 18 and 40.....	994
Item 6. Orphans under age of 12 made fatherless and motherless	4,360
Item 7. Number of young people killed in age period 15 to 25,	938

To Cost in Almighty Dollars :

Item 1. Money loss in educating the 938 young people who were killed by tuberculosis before the age of 25, at \$150 each.	\$140,700
Item 2. Loss in wages for one year of sickness of the 3,357 who were killed in the working period of 15 to 60, at \$10 per week	1,745,640
Item 3. Cost of sickness, nursing, doctors, medicine, average sickness one year of the 3,357 workers, at \$5 per week	872,820
Item 4. Estimating one-half (2,240) of the killed as valuable to society, and valuing each at one-half the statutory value, or \$5000, the loss is	11,200,000

Total cost to Indiana in one year..... \$13,959,160

How long will Indiana allow this loss to continue ?

23. Transactions National Association for the Study and Prevention of Tuberculosis, 1905, I, 211.

Epidemic Anterior Poliomyelitis.

The epidemic of anterior poliomyelitis continues, although there have not been the number of new cases reported for October that were reported in September. The cases that have occurred to October 26, 1910, in the year's epidemic, are as follows:

County.	Cases.	Deaths.	County.	Cases.	Deaths.
Atchison	1	0	Osborne.....	1	0
Brown	15	4	Ottawa.....	2	0
Chautauqua	2	1	Pawnee	1	0
Cherokee.....	1	0	Phillips.....	5	2
Cheyenne	2	1	Pottawatomie.....	1	0
Clark.....	1	0	Pratt.....	2	1
Cloud	7	1	Reno	3	0
Crawford.....	11	2	Republic	7	1
Decatur.....	4	1	Riley.....	6	3
Douglas.....	6	3	Rush.....	1	0
Gove.....	1	1	Saline.....	2	0
Greeley	1	0	Scott.....	1	1
Greenwood	1	0	Sedgwick.....	2	0
Hodgeman	1	1	Shawnee	16	4
Jefferson.....	4	1	Sheridan	1	0
Jewell.....	1	1	Smith.....	1	0
Johnson.....	3	0	Sumner	1	0
Kingman	2	2	Wabaunsee.....	5	2
Leavenworth	1	1	Washington.....	2	1
Linn	1	0	Wyandotte.....	30	8
Lyon.....	1	0			
McPherson	14	4	Totals.....	174	43
Montgomery	1	1	Mortality, 24.72 per cent.		
Nemaha.....	2	0			

Treatment at Long Range.

According to the *Christian Endeavor World*, Dr. Leopold Jaches, of Cornell's medical school, on his return from a study in Europe of the use of the Röntgen rays, said:

"Abroad, as here at home, the great public's knowledge of the rays continues rather vague. Investigators receive all manner of queer letters and requests. Thus I heard in Berlin of a man who wrote to a specialist:

"'DEAR SIR: I have had a bullet in my thorax for eleven years. I am too busy to come to Berlin, but hope you will come here with your rays, as my case should be worth your while. If you cannot come, send a packet of rays, with instructions as to use, and so forth, and I will see if I cannot manage to work them myself.'

"The specialist replied:

"'DEAR SIR: I am sorry that my engagements prevent my coming to see you, and that I am out of rays just now. If you cannot come to Berlin yourself, send me your thorax by express, and I will do the best I can with it.'"

Experience in Raising Children.

The following conversation was heard near a tenement:

"Did that there woman from the mission give ye a call yistidy?"

"Deed an' she did. Them kind makes me tired. Did n't she set for a good hour talkin' to me about sannytation an' hygeeny an' how I ought to give civilized milk to my baby, an' all that sort o' rubbish, until I got tired, an' I sez to her, sez I, 'Did she have any babies of her own?' An' when she looked foolish an' said as how she was 'Miss Brown,' I sez, sez I, 'Well, seein' that I've buried ten, I don't see as no one has any call to tell me how to rare up babies, 'speshly some one as never rared up none of her own.' I guess that dashed her so she won't be apt to come 'round givin' me no more of her gab about civilized milk an' sannytation an' sich nonsense.'"—*Lippincott's Magazine*.

A Smile.

The thing that goes the farthest toward making life worth while,
That costs the least and does the most, is just a pleasant smile—
The smile that bubbles from the heart that loves its fellow man
Will drive away the clouds of gloom and coax the sun again;
It's full of worth and goodness, too, with manly kindness blent—
It's worth a million dollars and does n't cost a cent.

There is no room for sadness when we see a cheery smile.
It always has the same good look—it's never out of style.
It nerves us on to try again when failure makes us blue.
Such disciples of encouragement are good for men and you.
So smile away, folks; understand by what a smile is meant—
It's worth a million dollars and it does n't cost a cent.

—*Exchange*.

Notes.

Get into the game.

Do you read the BULLETIN?

Rabies is becoming more prevalent.

The ordinary cur dog and town cat are a menace to the health of the community.

The reports of the Board's analysts on drugs and water are worth your time to read.

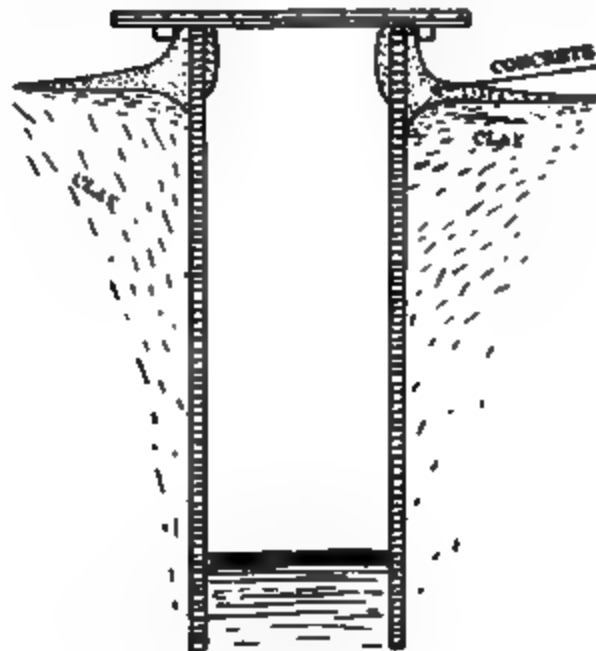
The discharge of untreated sewage into the waters of the state used as a source of water supply must cease.

Out of 137 samples of Chicago dairy milk, 10.5 per cent proved to be infected with the bovine tubercle bacilli.

The increasing prevalence of rabies in this state demands a law requiring all dogs to be muzzled for a period of ninety days.

Certain medical students thought that they had a joke on the department by telephoning that they had a dog with the diphtheria. Investigation showed that their diagnosis was based upon bacteriological findings, but the joke looked different to them when they were quarantined in their frat house. Cultures from all their throats showed that one of the students, as well as the dog, had diphtheria, and this opened another line of investigation in a hitherto unsuspected direction. "It's an ill wind," and "who laughs last," are both applicable.—*Buffalo Health Bulletin.*

This figure shows the common means by which a well is polluted. Filth drops directly into the well from the cracks in the top and washes in through the cracks in the upper parts of the casing. In such a case as this the well will be polluted, however deep it may be. Added depth is no protection when pollution enters at or near the surface.



Model construction of a well. Such a well will be safe and sanitary.

THE BLESSINGS OF TOIL!

This is the Gospel of Labor,
Ring it! ye bells of the kirk,
The Lord of Love came down from above
To be with the men who work.

This is the rose that He planted
Here in this thorn-cursed soil;
Heaven may be blest with perfect rest,
But the *blessing* of earth is *toil*.

— Van Dyke.

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 11.

NOVEMBER, 1910.

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Open the windows!

Be strong and of good courage.—*St. Paul.*

Nine-tenths of your troubles are imaginary.

Faith in one's cause is half the battle.

The value of life should not be judged by the cost of living.

Don't neglect that cold; consult your family physician; remember, "a stitch in time saves nine."

Let us have faith that right makes might, and in that faith let us dare to do our duty as we understand it.—*Lincoln.*

The two most important and valuable assets of any city: a wholesome and efficient water supply and a complete sewerage system.

We will match the drug and grocery stores of this state with any other state in the Union, of the same sized towns, as to sanitary condition and quality of stock.

Topeka has set the pace for other Kansas towns in the construction of a modern incinerating plant for the disposal of the city's waste and refuse. Here's hoping that others may do likewise.

A farmer exhibited a registered hog at the State Fair and was awarded a premium of \$100 and a blue ribbon; up to the present time no provision has been made to register Kansas babies. Are they worth it?

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
Meade	0	0	7	1	0	0	1	0	0	0	0	0
Miami	2	1	2	1	0	0	0	0	0	0	0	0
Mitchell	0	0	0	0	0	0	1	1	0	0	0	0
Montgomery	3	2	12	0	2	0	0	0	0	0	0	0
Morris	1	1	5	3	0	0	0	0	0	0	0	0
Morton	1	0	0	0	0	0	0	0	0	0	0	0
Nemaha	0	0	6	1	1	1	0	0	1	0	0	0
Neosho	1	1	8	2	2	0	8	1	0	0	0	0
Ness	0	0	6	1	0	0	1	0	0	0	0	0
Norton	0	0	7	0	0	0	6	0	0	0	0	0
Osage	9	0	8	2	0	0	0	0	0	0	0	0
*Osborne												
Ottawa	0	0	11	1	0	0	2	0	0	0	1	0
Pawnee	0	0	0	0	0	0	0	0	0	0	0	0
Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	0	0	0	0	2	0	0	0	0	0
Pratt	0	0	8	0	0	0	0	0	0	0	0	0
Rawlins	0	0	1	0	0	0	0	0	0	0	0	0
Reno	1	0	16	2	0	0	15	0	0	0	0	0
Republic	1	1	8	1	0	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	0	0	4	0	1	0	0	0	0	0	0	0
Rooks	0	0	3	1	0	0	0	0	0	0	0	0
Rush	1	1	1	0	0	0	6	0	0	0	0	0
Russell	0	0	0	0	0	0	0	0	0	0	0	0
Saline	1	1	2	0	0	0	0	0	0	0	0	0
Scott	0	0	1	0	0	0	0	0	0	0	0	0
Sedgwick	1	1	7	0	0	0	1	0	0	0	0	0
Seward	0	0	0	1	0	0	0	0	0	0	0	0
Shawnee	2	2	0	0	1	0	7	0	0	0	0	0
Sheridan	0	0	2	0	0	0	0	0	0	0	0	0
Sherman	0	0	6	0	0	0	0	0	0	0	0	0
Smith	0	0	0	0	7	0	2	0	0	0	0	0
Stafford	4	0	0	0	4	0	2	0	0	0	0	0
Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	0	0	0	0	0	0	0	0	0	0	0	0
Sumner	0	0	5	3	4	0	5	0	0	0	1	0
Thomas	0	0	1	0	0	0	0	0	0	0	0	0
*Trego												
Wabaunsee	0	0	0	0	0	0	3	0	0	0	0	0
Wallace	0	0	0	0	0	0	0	0	0	0	0	0
Washington	0	0	1	0	0	0	1	0	0	0	0	0
*Wichita												
Wilson	0	0	4	1	14	0	25	0	0	0	0	0
Woodson	1	1	8	1	2	1	0	0	0	0	0	0
Wyandotte	0	0	0	0	1	1	0	0	1	0	0	0
Cities:												
Fort Scott	2	2	0	0	28	2	0	0	0	0	0	0
Atchison	1	1	0	0	0	0	0	0	0	0	0	0
Coffeyville	1	1	9	0	1	0	2	0	0	0	0	0
Kansas City	5	9	44	9	47	8	11	0	1	0	2	0
Leavenworth	2	2	8	2	7	1	1	0	0	0	0	0
Parsons	3	8	7	1	1	1	0	0	0	0	0	0
Pittsburg	0	0	0	0	3	1	2	0	0	0	0	0
Topeka	8	8	3	3	1	0	7	0	1	0	0	0
Wichita	0	0	18	5	48	7	8	0	1	0	0	0
State Institutions.	188	4	0	0	1	0	0	0	0	0	0	0

* No reports.

You have mistaken the purpose of your grindstone if you are holding your nose to it.

FOOD ANALYSIS No. XXXI.

By Prof. E. H. S. BAILEY, Ph. D., Chemist for the State Board of Health, and
Asst. Prof. H. LOUIS JACKSON, M. S., Food Analyst.

It is thought that some statements regarding the following report of analyses of food products may serve to make the tabulated data clearer to the general public. It is desired that every one should have just as clear an understanding of these reports as possible, because the work is done for their information and protection and the work rests, in the final analysis, upon the intelligent support of the whole people of the state. Any criticism which will help to make the report more intelligible to the public will be gladly received.

In regard to vinegar then, the "precipitate with lead acetate" is important, since it serves to indicate which are cider vinegars and which are not. When a solution of lead acetate is added to cider vinegar the liquid, which until then was clear, becomes cloudy, and soon solid substance begins to settle and looks not unlike flakes of snow—which, however, are brownish instead of white. Any such material separating as above is called a precipitate, and when fluffy, like flakes of snow, is called a flocculent precipitate. Distilled vinegars colored in imitation of cider vinegar give no precipitate with lead acetate, thus being at once detected. Glucose or corn sugar vinegar, though looking like cider vinegar, gives a very different precipitate. It is denser and settles more slowly than in the case of cider vinegar, is not flocculent, and does not leave a clear liquid above the precipitate, as does cider vinegar. By practice on a few known pure cider vinegars one will soon be able to see the great difference between cider vinegar and other vinegars.

No attempt is made to say what kind of vinegar is most desirable, as that must be left to individual judgment, but one should be able to get the kind he prefers. The word "vinegar" unmodified applies to *cider vinegar* only; all other vinegars must be so labeled as to declare the class to which they belong.

"Acid." All vinegar, of whatever kind, must contain at least 4 per cent. of acid.

"Solids" in cider vinegar are above 1.60 per cent, usually 2 per cent and over; low solids point to watering or other kinds of vinegar. "Ash" is above 0.25 per cent, usually above 0.30 per cent. Low ash indicates the same as low solids.

"Insoluble ash" in cider vinegar is small in comparison with soluble ash; if large it raises a suspicion and leads to further analysis.

"Soluble ash" is that portion of ash soluble in water, and the whole ash is obtained by evaporating the vinegar to dryness and weighing the solid matter as "solids," then burning the solids to a white or light-colored ash and weighing as ash.

"Alkalinity of soluble ash." Every vinegar ash is alkaline—that is, is of a nature opposite to acid. The measurement of the strength of this alkalinity is performed by finding out how much standard weak acid is equal to the alkali in the ash. This is expressed in certain units called cubic centimeters (abbreviated to cc.), a small unit of volume constantly used in scientific measurements. Cider vinegar will take more than 30 cc. of this weak acid to equal the alkali in the ash from 100 cc. of vinegar.

For example, it is impossible for No. 7762 and No. 9221 to be pure cider vinegars, since their alkalinity of soluble ash is only 8.80 cc. and 17.12 cc. This is also confirmed by other determinations, as white or slight precipitate with lead acetate solution, small solids, small ash, etc. So it will be seen that the various illegal vinegars do not correspond in analysis to a standard cider vinegar.

If the above determinations are insufficient to prove adulteration and the vinegar is suspected, then other kinds of tests are made until proof is obtained.

In the case of olive oil, the "refractive index" is a measure of the bending of a ray of light when it passes into the oil. It is characteristic of various oils. Many known pure olive oils have been examined and found to range from 1.4703 to 1.4718. Cottonseed oil varies from 1.4737 to 1.4757. Specific gravity at 15.5 degrees centigrade, abbreviated to "Sp. gr. at 15.5° C.," is a measure of the weight of a given volume of oil compared with the same volume of pure water at a definite temperature. Olive oils vary from 0.9140 to 0.9185, though as high as 0.9196 has been reported.

The "iodine number" is a measure of the weight of iodine absorbed by the oil and varies from 77.7 to 93.5. Sesame oil varies from 102.0 to 112.0.

The "Halpen test" is a direct test for cottonseed oil, and when designated "negative" means none was found present.

"Baudouin test" is a direct test for sesame oil.

One may be deceived by a label if it is not read carefully. An example is a label which reads:

"SUPERIOR IN
QUALITY, PURITY AND FLAVOR,
TO ANY
OLIVE OIL
IN THE MARKET.
TRADE MARK.
ALL OUR BEAR
CORKS AND CAPSULES OUR NAME.
THIS BRAND, TRADE MARK AND LABEL
ARE REGISTERED.
DOVE PURE OIL CO."

This was on a bottle of maize or corn oil. Olive oil was in a very conspicuous large type, and between the words "trade" and "mark" was the picture of a dove bearing an olive branch with olives growing on it.

Two brands found in Massachusetts in June and July and containing cottonseed oil were Olio D'Oliva Sopraffino, "Lucca Mulvino" brand, and "Torelli" pure olive oil, Olio Puro D'Oliva Garantito. The last was *wholly* cottonseed oil.

TABLE OF VINEGARS.

No.	KIND.	Precipitation with lead acetate.	Acid, per cent....	Solids, per cent....	Ash, per cent....	Soluble ash, per cent.....	Insoluble ash, per cent.....	Alkalinity of soluble ash.....	Alkalinity of in- soluble ash.....	Remarks.....
5432	Distilled.....	None.....	4.09	.....	.....	.....	.....	.....	.....	Passed.
5436	4.74	.....	.....	.....	.....	.....	.....	..
5441	.. colored.....	..	6.80	.....	.....	.....	.....	.....	.....	..
5442	2.78	.....	.....	.....	.....	.....	.....	Illegal.
6474	Cider.....	Heavy.....	4.36	1.74	0.23	0.22	0.01	29.96	4.20	Passed.
6475	4.64	2.08	0.28	0.26	0.02	37.70	4.20	..
6477	4.54	2.98	0.40	0.34	0.05	47.58	4.32	..
7682	..	Fair.....	5.13	2.26	0.35	0.33	0.01	46.52	4.80	..
7688	..	Heavy.....	4.59	2.33	0.35	0.33	0.02	41.48	4.72	..
7737	..	Good.....	4.75	1.77	0.39	0.37	0.06	51.72	2.00	..
7752	..	Heavy.....	4.94	2.97	0.48	0.42	0.06	45.12	5.20	..
7753	2.87	1.65	0.38	0.34	0.04	49.32	5.20	Illegal.
7754	3.96	2.47	0.43	0.38	0.05	53.32	4.40	Passed.
7759	5.09	3.32	0.49	0.44	0.05	58.40	4.20	..
7762	..	White.....	4.59	0.56	0.17	0.15	0.02	8.80	2.00	Illegal.
9212	..	Heavy.....	4.43	2.32	0.36	0.33	0.06	48.68	4.32	Passed.
9213	..	Good.....	4.68	1.71	0.27	0.23	0.04	35.32	5.56	..
9221	..	Slight.....	1.94	0.53	0.11	0.10	0.01	17.12	2.56	Illegal.
9267	..	Heavy.....	3.51	3.24	0.38	0.30	0.08	48.82	9.52	..
9268	3.19	3.15	0.41	0.34	0.07	44.52	10.52	..
9269	..	Slight.....	3.82	1.36	0.29	0.26	0.03	38.92	7.60	..
9280	..	Heavy.....	4.75	2.54	0.40	0.37	0.03	50.92	6.40	Passed.
9281	4.22	2.48	0.38	0.31	0.07	40.88	5.20	..

ADDITIONAL DATA TO ILLEGAL VINEGARS LISTED ABOVE.

No. 5442. Label, Pure Distilled Vinegar. Manufacturer, Monarch Vinegar Company, Kansas City, Mo. Retailer, John H. Brown & Co., Atchison. See analysis. Illegal.

No. 7753. Label, Country Vinegar. Said to be pure apple cider vinegar. Bought from farmer, Captain Hedrick. Retailer, W. W. Wells, Hutchinson. See analysis. Illegal.

No. 7762. No name on barrel. Retailer, Mrs. M. T. Sparks, Larned. See analysis. Illegal.

No. 9221. Vinegar. Said to be cider vinegar. Manufacturer, Leuf Pippert, farmer. Retailer, Pippert Bros., Worden. See analysis. Illegal.

No. 9267. Label, Silver Leaf Cider Vinegar. Manufacturer, The Otto Kuehne Preserving Company, Topeka. Retailer, Thorene & Walstrom, Sharon Springs. See analysis. Illegal.

No. 9268. Label, Silver Leaf Pure Cider Vinegar. Manufacturer, The Otto Kuehne Preserving Company, Topeka. Retailer, George Cox, Sharon Springs. See analysis. Illegal.

No. 9269. Vinegar. Said to be cider vinegar. Retailer, J. H. Donecker, Bunkerhill. See analysis. Illegal.

TABLE OF OLIVE OILS.

No.	Refractive index at 15.5° C.	Sp. gr. at 15.5° C.	Iodine No.	Halpen test.	Baudouin's test.	Color.	Remarks.
1333	1.4705	0.9166	81.19	Negative.....	Negative.....	Yellow.....	Passed.
1334	1.4706	0.9168	81.16	.....	.....	.....	.....
1340	1.4713	0.9194	83.32	.....	.....	.....	.....
1443	1.4708	.....	.....	.....	.....	Yellow.....	.....
1564	1.4713	0.9190	81.47	.....	Negative.....	.....	.....
2144	1.4705	0.9166	79.75	.....	.....	.....	.....
5264	1.4714	0.9170	82.85	.....	.....	.....	.....
7273	1.4717	.....	.....	.....	.....	.....	.....
7286 A	1.4708	0.9173	83.95	.....	Negative.....	Greenish-yellow.....	.....
7305	1.4712	.....	.....	.....	.....	Yellow.....	.....

PICKLES.

No. 6462. Tested for alum. None found. Passed.

No. 6467. Tested for alum. None found. Passed.

No. 6468. Tested for alum. None found. Passed.

No. 6469. Tested for alum. None found. Passed.

No. 6471. Tested for alum. None found. Passed.

No. 6472. Tested for alum. None found. Passed.

PICKLES, RELISHES, ETC.

The final date after which pickles and other similar products containing alum could be sold in Kansas has long passed, as that date was September 1, 1909, which date was an extension from

September 1, 1908. This extension was made in order that no undue hardship should be imposed on the retail or wholesale trade. It would seem that advantage had not been taken of this extension of time and that pickles containing alum had not been disposed of as required. Pickles containing alum are still on the market in Kansas, as shown by recent collections.

No. 6453. Label, Sweet Pickles. Manufacturer, Dodson-Braun Branch, St. Louis, Mo. Retailer, Baker Bros., Coffeyville. Benzoic acid present. Illegal.

No. 9237. Label, Silver Leaf Brand Mexican Hot. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, C. E. Peterson, Scranton. Alum present. Illegal.

No. 9238. Label, Silver Leaf Brand Celery Relish. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, C. E. Peterson, Scranton. Alum present. Illegal.

No. 9240. Label, Silver Leaf Brand Sweet Gherkins. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, Gardner Mercantile Company, Scranton. Alum present. Illegal.

No. 9249. Label, Orchid Brand Spiced Pickles. Manufactured for Bittman-Todd Grocery Company, Leavenworth. Retailer, Kratzer Bros., Volland. Alum present. Illegal.

No. 9341. Label, Homemade Pickles. Manufacturer, Eureka Pickle Company, St. Louis, Mo. Retailer, J. E. Legleiter, Buffalo Park. Alum present. Illegal.

No. 9342. Label, Silver Leaf Brand Sweet Gherkins. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, J. E. Legleiter, Buffalo Park. Alum present. Illegal.

No. 9343. Label, Homemade Pickles. Manufacturer, Eureka Company, St. Louis, Mo. Retailer, C. C. Hickman, Collyer. Alum present. Illegal.

No. 7766. Label, Jumbo Brand. Manufacturer, The Eloma Manufacturing Company, Pueblo, Colo. Retailer, C. D. Spaugh, Great Bend. Alum present. Illegal.

No. 9207. Label, Waldorf Brand Relish. Manufacturer, William Bros. Company, Detroit, Mich. Retailer, Driesbach Bros., Topeka. Alum present. Illegal.

No. 9266. Label, Silver Leaf Brand Dill Pickles. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, Thorene & Walstrom, Sharon Springs. Alum present. Illegal.

No. 9345. Label, Silver Leaf Brand Sour Mixed Pickles. Manufacturer, Otto Kuehne Preserving Company, Topeka. Retailer, I. W. Carver, Oakley. Alum present. Illegal.

CIDER.

No. 3955. Label, Apple Cider. Manufacturer, National Fruit Products Company, Memphis, Tenn. Sent in by Dr. L. A. Marty, Hays City. Contents saccharin. Illegal.

BAKING POWDER, POISONED.

On or about September 24 there was received at the food laboratory a sample of baking powder from H. H. Keith, coroner of Shawnee county. This baking powder had been put up by a druggist of Topeka according to the following formula: Cream of tartar, 4 oz.; tartaric acid, 4 oz.; soda, 9 oz.; cornstarch, 10 oz.

The powder was used by the family ordering the same to make biscuits. Seven persons ate of the biscuits and were all made deathly sick about thirty minutes after eating. They were taken with severe griping pains in the stomach, and nausea, diarrhea following in a short time. Two of the seven came near dying. Two negroes eating later, after the family had consumed all the biscuits, ate bread and were not made sick, though they ate of all the other food. This threw the suspicion wholly upon the baking powder used in the biscuits.

Upon analysis, large quantities of antimony were found in the baking powder, making it probable that the druggist's clerk had put "tartar emetic" (a tartrate of antimony and potassium) instead of "cream of tartar" into the powder.

In view of the intimate proximity of poisons and harmless material in a drug store, such mistakes take on a very serious character. Only clerks of the utmost reliability, of thorough training and of careful habits should be allowed to put up prescriptions of any kind.

EVAPORATED PEACHES, BLEACHED.

No. 7683. Evaporated Peaches, Maltriss Cross. Manufacturer, California Dried Fruit Agency, Fresno, Cal. Retailer, T. S. Lathen, Lane. Bleached with sulphur dioxide, which was not stated on the label. Illegal.

Regulation 10:

"(f) Food products which have been colored, bleached or otherwise treated, and are by reason of such treatment liable to be regarded as superior in quality, or liable to deceive in respect to their nature or origin, shall bear a statement of such treatment on each wholesale package and on each retail package or container as delivered to the consumer."

CANNED FRUIT.

No. 9290. Peaches. Passed.

No. 9290. Apricots. Passed.

CREAM AND ICE CREAM.

No.	Per ct. butter fat.	Starch.	Gelatin.	Remarks.
6483*	25.6	Absent	Absent	Sucrose absent. Passed.
9308	8.6	"	Present	Illegal.
9306	11.7	"	"	"
9307	10.4	"	"	"
9309	17.4	"	"	Passed.
9310	14.9	"	Present	"
9311	15.5	"	"	"
9312	12.9	"	Absent	Illegal.

* Cream.

LEMON EXTRACT.

No. 7611. Per cent lemon oil, 5.1. Passed.

No. 9084. Per cent lemon oil, 5.4. Passed.

HONEY.

No. 7758. Passed.

No. 7758A. Passed.

Poliomyelitis Acuta in Animals.

(Infantile paralysis.)

By A. L. SKOOG, M. D., Assistant Professor of Neurology, University of Kansas; Neurologist to St. Margaret's Hospital, Kansas City; Special Investigator for the Kansas State Board of Health.

During the past few decades large amounts of experimental work upon animals have given the medical science many important results, some of which have been of enormous value utilized for various therapeutic purposes. In some of the animal experimental work the object has been diagnosis and demonstration of local lesions. However, the importance of the therapeutic side must not be overlooked; particularly is this so when we think of the growing importance of the vaccine and serum therapies. It is a fact that thus far no organism has been discovered or described as certainly causing poliomyelitis acuta. Much work has been done with this object in view—work which is still being feverishly pursued. The lack of seeing an organism need not deter us from seeking to improve our methods for making an earlier diagnosis and for giving better scientific treatment. The brilliant results accomplished in the treatment of rabies need only be mentioned. We know that as yet no organism has been declared with certainty as a cause for this disease. During recent years some scientists have come to the belief that the Negri bodies represent the cause of the disease; but even admitting that this is correct, which is not yet satisfactorily demonstrated, it must be borne in mind that the success of the Pasteur treatment was established many years before the first description of the Negri bodies. I might mention variola as another illustration. I call attention to diphtheria, tetanus and several of the diseases whose causative bacteria have been known for some time, and for which antitoxin serums were discovered and

used with success some years after the discovery of the respective organisms. Thus, we can reason that our therapeutic armamentarium can be strengthened for acute poliomyelitis with or without the discovery of specific organisms.

It must be borne in mind that when we attempt animal experimentation upon the central nervous system, we are facing one difficulty not so apparent in investigative work in the pathology of other organs. The central nervous system is the crowning achievement in the comparative anatomical and physiological development of man. The great difference in the brain of man and that of even the most highly developed lower animal (for instance, the anthropoid ape) is very marked. However, in the individual cell of any portion of the encephalon or the spinal cord there is noted not so great a difference in structure; thus volume of nervous tissue, and particularly physiological culture, are where the greatest differences are to be observed.

For about two decades, beginning with the time when so many bacteria were being discovered as the cause of respective specific diseases, many investigators turned their attention to the search for a bacterium that might be the cause of poliomyelitis acuta. I might mention the reports of Harbitz and Scheel, Gierswold, Schultze, Marinesco and others where cocci were described. Collins described a coccus discovered in an autopsy case of Landry's paralysis, which disease we to-day believe to be merely a type of the so-called infantile paralysis, the acute ascending type. As a result of the experimental work of the past two years, we believe there may have been some post-mortem or ante-mortem contamination in the cases reported. Careful bacteriological labors have to date not revealed the organism under the microscope. I have had a coccus growth on cultures in a few cases, but did not attribute much importance to the findings, since there were avenues of contamination during experimental work.

On account of the closer comparative anatomical relationship of the central nervous system of the higher monkeys to man, some of the Old World monkeys, particularly the *Macacus rhesus*, have been used in experimental work of poliomyelitis acuta. Possibly the best animal for this purpose would be the chimpanzee, but the difficulty of obtaining them and the expense make the use of these animals almost prohibitive, even in such an institution as the Rockefeller Institute, supplied with almost unlimited funds.

The work of Karl Landsteiner and Erwin Popper is notable as the first success in the transmission of poliomyelitis acuta from man to a lower animal. They obtained their fresh material from an autopsy case in Wilhelmina Children's Hospital of Vienna two years ago. Segments of the spinal cord were macerated in a sterile normal saline solution, and the extract injected under aseptic conditions into the peritoneal cavity of rabbits, guinea pigs, mice and

monkeys. The monkeys, one *Macacus rhesus* and one *Cynocephalus hamadryas*, developed an illness and paralysis quite similar to that of the human. Sections of the spinal cord at different levels showed the same pathological changes that we find in poliomyelitis acuta during the acute stage. The other animals failed to develop the disease. Inoculations of a second series of monkeys from the spinal cord of these first two failed to transmit the disease. It remained for Flexner and Lewis, during their work in the Rockefeller Institute, to accomplish the transmission of the virus through a large series of monkeys. They obtained their original virus from two autopsied cases in children; thus they have been able to keep running two series of inoculations. The results of the above experiments are sufficient to permit us to conclude that some virus is undoubtedly the cause of the disease. The transmissibility of poliomyelitis acuta is fully established, in our opinion, although accomplished with some difficulty. None of the experimenters are able to demonstrate any cultures from the inoculated animals. It is true that all of Koch's laws have not been complied with, but there are a number of other diseases, which are accepted as being caused by some organism, in which one or more of Koch's four strict laws have not been satisfied. It is quite probable that some day we may be able to observe the micro-organism under the microscope. Flexner and Lewis consider the possibility of the organism being ultra-microscopic, in that it passes through Berkefeld and Chamberland filters. Others who have successfully inoculated monkeys are Knöpfelmacher, Leiner and Wiesner, and Levaditi and Landsteiner, in the Pasteur Institute. Lucas, of Harvard Medical School, inoculated monkeys from a virus obtained at the Rockefeller Institute from the Flexner and Lewis series of inoculated monkeys.

In the BULLETIN of the Kansas State Board of Health for July, 1910, there were reported abstract results of experimental work on animals regarding poliomyelitis. Results as to inoculation were negative in all animals, including three monkeys. As soon as new cases were reported this summer, six new monkeys were purchased from a New York animal dealer. These were select young monkeys from the Old World. Experimental work has been continued with the monkeys used last year, as well as those last purchased.

Monkey No. 4 was used a number of times during the 1909 season, with negative results, but no inoculations were made directly into the central nervous tissue. On July 22, through the courtesy of Dr. Frank Hall, I was given charge of the brain and spinal cord from an autopsied case dying from an acute fuldroyant type of poliomyelitis acuta. I macerated one segment from the cervical swelling of the spinal cord and a piece from parietal, frontal and thalamus areas of the brain in a normal saline solution. One-half cc. was injected into the lateral ventricle and a like amount into

the subarachnoidean space after a two-centimeter circular piece of parietal bone had been removed with a chisel and mallet, the animal being under ether anesthesia during operation. The animal recovered nicely from the operation and showed no acute symptoms for some time. On September 1, 1910, during the morning, it was observed that when alarmed it failed to run up the side of the cage, as its two mates did, and as it had on previous days been accustomed to doing. When given a greater scare it finally crawled up the side of its cage in a sluggish manner, but using mostly the anterior extremities in pulling up the body weight. It was removed from the cage, and walked around the room. There was observed a decidedly greater amount of paralysis in the posterior extremities. It was easily fatigued, and then, when led about, would drag on its buttocks. The muscles seemed a little flaccid. There were no complete muscle group paralysis. In testing the reflexes it was found that the patellars were not as brisk as in a normal monkey, right being more feeble than the left. The animal was observed closely for a few days, with possibly a slightly increasing paralysis. There was a slight diarrhea for a few days. The hair was much ruffled, as is frequently observed in sick animals. There seemed to be a great amount of tenderness in the neck, along the spine and in the lumbar region, and pressure applied on the back of the neck brought forth an unusual amount of screaming. On September 9 acute symptoms were subsiding, and the gait possibly slightly improved. The animal was killed on this day, and autopsied at five P. M. The central nervous system showed nothing macroscopically. There was a marked hyperplasia of the mesenteric lymph glands, a number being broken down and containing a grumous fluid.

Monkeys Nos. 7 and 8 of the new group were inoculated by the intracranial method as last used in No. 4, the material for inoculation being obtained from the spinal cord of the autopsied monkey. Monkey No. 7 has never given any evidence of palsies, and is now quite active and well.

Monkey No. 8 had some cough at the time of inoculation, otherwise appeared to be in fair health. It had 1 cc. of a normal saline extract from the spinal cord of monkey No. 4 introduced into the left ventricle, after a portion of the parietal cranium had been removed. One-half cc. was introduced into the subarachnoidean space at the same time. It made a good operative recovery, and until about the 25th of October had given no evidence of any acute illness or paralysis. About this time it began to be less active and climbed about the cage poorly; the hair was everywhere bristled. The weakness seemed to be quite general in its distribution, there being very little difference in power between the anterior and posterior extremities. There was more coughing. It vomited a few times. On the 29th of October the gait was pe-

cidedly poor, and when walking about the room it would soon drop down and allow its posterior extremities to be dragged. When walking there was noted a dragging and turning inward of the right posterior extremity. The animal on this date was put to death with the intention of inoculating other monkeys from the virus obtained from the spinal cord, but owing to the finding of a severe miliary tuberculosis of the lungs, liver and spleen, no further inoculations were made. There was no tuberculosis of the central nervous system nor of any thoracic or abdominal organs other than those stated. In the right lung there was one apparently old lesion about the size of a pecan, which was about to become caseous.

Sections of the central nervous tissue from monkey No. 8 have not yet been prepared for a microscopic examination. A number of segments from the spinal cord of monkey No. 4 have been studied under the microscope after making Nissl and picrofuchsin stains. Many of the sections show various types of degenerations of both the right and the left anterior horn motor cells. Tigrolysis and vacuolization were especially nicely illustrated in these specimens.

Monkey No. 6 is one that was used last year. On the 28th of July I removed a button of bone over the parietal brain on the right side of this monkey, the animal being under ether anesthesia, and introduced 1 cc. of cerebrospinal fluid removed from a boy aged eleven years having an acute fudroyant type of poliomyelitis, and on whom I performed a lumbar puncture about the time he was entering his paralytic stage. The fluid was transported to the laboratory from a town in the interior of Kansas, and was not used for inoculation until thirty-six hours after being removed. About September 20 it was noticed that the animal was more sluggish and slower to start up the side of the cage when alarmed, the monkey having been very active previous to the inoculation. On the 10th of October the monkey, which had been in a cage by itself, was now transferred to a cage with three other monkeys, where during the night it had been run about the cage and abused considerably by the others. It was again removed to a cage by itself on the following day and closely examined. There seemed to be considerable general weakness, but a decidedly greater amount in the posterior extremities. It had a great deal of difficulty in climbing up the side of the cage. The temperature at this time was 102.3° F. In testing the reflexes I found a slight right patellar and no left. On account of the rather insidious onset of the paralysis in this monkey, it was not killed for the purpose of reinoculating other monkeys from the spinal cord, but kept for other purposes. The animal continued to improve for a short period. Its condition is now apparently stationary. From the course of this case, I conclude that it is undoubtedly a type of poliomyelitis acuta, which is occasionally observed in man. It is true that the incubation period is rather long. While the minimum incubation

period for poliomyelitis acuta is usually given as four days, the maximum is still somewhat uncertain. Flexner and Lewis have successfully inoculated a monkey from the cerebrospinal fluid of another acutely ill monkey. My case is the first of which I have any knowledge in which there has been an inoculation of a lower animal with the cerebrospinal fluid from a human case of poliomyelitis acuta.

For several years there have been incomplete or vague reports regarding apparently spontaneous poliomyelitis acuta in some of our domestic animals. A number of these reports have come from several places in Kansas. On November 5 and 6, 1910, Doctor Schoenleber, the state veterinary surgeon, from Manhattan, was sent out with me to investigate some of the reports at Miltonvale, Kan. After making a number of inquiries at the place, we could find nothing suspicious of poliomyelitis acuta in any of the animals reported. I spent one day at Ellis, Kan., in running down reports of the disease among cats, horses and chickens. Many of the cats had been destroyed and could not be properly investigated. One live cat was removed to the laboratory for observation, and may or may not have poliomyelitis acuta. It is now being closely studied. Three horses had died suddenly out in the country, but probably had succumbed to some other cause.

An interesting report is that of Dr. C. S. Shore, a veterinarian of Lake City, Minn., who read a paper before the Minnesota Veterinary Medical Association, February, 1910, in which he stated that he had in the past five or six years seen from five to ten cases of a disease which resembled quite closely poliomyelitis acuta. The disease always appeared in colts from one to two years old. The symptoms were similar to those in man. All occurred in August. The onset was first noticed by a difficulty in standing. After an unsteady gait for about twenty-four hours there appeared a complete loss of motion in some muscles. The temperature ranged from 103° to 104° (normal being about 101°). Appetite remained good. Swallowing was impaired. Some typhinitis was present. Some retention of urine occurred. The death rate was less than 10 per cent. The market value of the horses that recovered was much decreased. The duration of acute illness was from one to three weeks; then they continued to improve for about one year, after which time the muscles failed to increase in power. Complete recovery seldom occurred. Unfortunately no autopsies and no studies of the nervous tissues were made. It looks rather suspicious that those animals had poliomyelitis, but it should have been confirmed by autopsies.

In conclusion, we can state that monkeys can be inoculated with the virus of poliomyelitis acuta, but it does not seem to be readily accomplished. There may be some difficulty in the introduction of the virus from one animal to another, but when it is accomplished the results are serious for the animal. In view of the animal experimental work, there is no doubt but what some kind of isolation should be observed for all cases of poliomyelitis acuta. This is particularly true for the epidemic type.

A SURE CURE.

A haggard looking woman, speaking with a strong Irish brogue, walked into a West Side drug store in New York the other day and asked for a bottle of Dr. Quack's Consumption Cure. While the clerk was wrapping the package, she conversed volubly of Mike, her husband, who was sick with consumption. She said one of her neighbors, Mrs. Casey, had told her that the bottle of medicine she held in her hands would surely restore Mike to health. So she had saved 50 cents from the scant earnings made over the washtub in order that her husband might have a chance. As she turned to go away, her eye was attracted by a sign upon which was this legend in big red letters, "BUY RED CROSS CHRISTMAS SEALS, AND HELP CURE CONSUMPTION. A PENNY FOR A SEAL."

From the few cents in the palm of her hand, the woman drew out a nickel and handing it to the clerk, said: "Oi'll take five of thim. Sure, with this bottle of medicine, and thim things stuck on Mike, he'll be well in a week."

BULLETIN

OF THE

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S. J. CRUMBINE, M. D., Secretary and Editor.

W. J. V. DEACON, Statistician.

No. 12.

DECEMBER, 1910.

VOL. VI

VITAL STATISTICS NUMBER.

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Swat the city dump.

I herewith resolve to do it better.

The bad egg is outlawed in Kansas.

Registration of vital statistics is a sanitary necessity.

The neglected cough is the chiefest of the season's dangers.

Are you in favor of registering the future citizens — the babies?

Official proof of citizenship is accomplished by the registration of vital statistics.

An accurate record of the movement of population is only possible through vital statistics registration.

Idaho and Louisiana are the latest states to abolish the common drinking cup on railroad trains and in public schools.

"An ounce of prevention is worth a pound of cure" is but a proverbial expression of the relative importance of preventive medicine.

VITAL STATISTICS

Reported to the Kansas Board of Health for November, 1910.

CONTAGIOUS AND INFECTIOUS DISEASES.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..	Cases...	Deaths..
The State...total, November, 1909...	260 282	53 61	224 188	37 42	176 315	16 30	428 237	4 5	211 109	1 0	21 48	0 2
Allen	1	1	4	1	0	0	10	1	3	0	0	0
Anderson	1	1	0	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	2	0	0	0	0	0	0	0
Barber	0	0	6	0	0	0	0	0	0	0	0	0
Barton	1	1	2	2	1	0	20	0	0	0	0	0
Bourbon	2	1	2	1	4	2	1	0	2	0	0	0
Brown	0	0	0	0	1	0	0	0	65	0	0	0
Butler	0	0	4	1	2	0	7	0	0	0	2	0
Chase	0	0	2	0	0	0	0	0	0	0	0	0
Chautauqua	2	2	1	0	0	0	1	0	0	0	0	0
Cherokee	2	2	4	0	10	0	16	0	0	0	0	0
Cheyenne	0	0	8	1	0	0	0	0	0	0	0	0
Clark	0	0	2	0	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0	0	0	0	0
Cloud	0	0	0	0	0	0	0	0	0	0	0	0
Coffey	0	0	3	0	1	0	0	0	0	0	0	0
Comanche	0	0	0	0	0	0	0	0	0	0	0	0
Cowley	6	6	0	0	1	1	10	0	0	0	0	0
Crawford	1	1	1	1	7	0	0	0	0	0	0	0
Decatur	0	0	0	0	0	0	0	0	0	0	0	0
Dickinson	0	0	1	0	0	0	1	0	5	0	0	0
Doniphan	1	1	3	3	0	0	7	0	67	0	0	0
Douglas	3	2	0	0	5	0	7	0	0	0	0	0
Edwards	0	0	2	0	1	0	0	0	0	0	0	0
Elk	1	0	2	0	3	0	2	0	0	0	0	0
Ellis	0	0	4	0	3	0	5	0	0	0	0	0
Ellsworth	0	0	0	0	0	0	38	0	0	0	0	0
Finney	0	0	0	0	0	0	0	0	0	0	0	0
Ford	0	0	5	1	0	0	16	0	0	0	0	0
Franklin	1	1	0	0	4	0	0	0	0	0	0	0
Geary	0	0	0	0	8	0	0	0	0	0	0	0
Gove	0	0	2	1	0	0	15	0	0	0	0	0
Graham	0	0	3	3	0	0	0	0	0	0	0	0
Grant												
Gray	2	2	1	0	0	0	0	0	0	0	1	0
Greeley	0	0	1	0	0	0	0	0	0	0	0	0
Greenwood	0	0	0	0	0	0	24	0	0	0	0	0
Hamilton	0	0	0	0	0	0	2	0	0	0	0	0
Harper	0	0	2	0	0	0	2	0	0	0	0	0
Harvey	0	0	0	0	0	0	11	0	0	0	0	0
Haskell	0	0	1	0	0	0	0	0	0	0	0	0
Hodgeman	0	0	0	0	0	0	12	0	0	0	0	0
Jackson	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson	0	0	2	0	0	0	2	0	0	0	0	0
Jewell	0	0	1	0	0	0	6	0	0	0	0	0
Johnson	0	0	3	0	0	0	13	0	0	0	0	0
Kearny	0	0	3	0	0	0	0	0	4	0	0	0
Kingman	0	0	1	0	7	0	1	0	0	0	0	0
Kiowa	0	0	0	0	0	0	0	0	0	0	0	0
Labette	0	0	3	0	2	0	1	0	0	0	0	0
Lane	0	0	0	0	0	0	0	0	0	0	1	0
Leavenworth	0	0	0	0	0	0	5	0	0	0	0	0
Lincoln	0	0	1	1	0	0	2	0	0	0	0	0
Linn	0	0	0	0	0	0	0	0	0	0	0	0
Logan	1	0	2	0	0	0	0	0	0	0	0	0
Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Marion	0	0	0	0	0	0	1	0	0	0	0	0
Marshall	2	2	2	1	0	0	0	0	4	0	0	0
McPherson	0	0	2	0	0	0	5	0	0	0	0	0

CONTAGIOUS AND INFECTIOUS DISEASES—Concluded.

COUNTIES.	Tubercu- losis.		Typhoid fever.		Diph- theria.		Scarlet fever.		Smallpox.		Measles.	
	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.	Cases...	Deaths.
Meade	0	0	14	0	0	0	0	0	0	0	0	0
Miami	2	2	1	0	0	0	0	0	0	0	0	0
Mitchell	0	0	1	0	0	0	0	0	0	0	0	0
Montgomery	2	0	8	2	2	0	7	0	1	0	0	0
* Morris	0	0	0	0	0	0	0	0	0	0	0	0
Morton	0	0	5	1	1	1	1	0	0	0	0	0
Nemaha	0	0	4	2	2	0	0	0	0	0	0	0
Neosho	1	1	2	1	0	0	0	0	0	0	0	0
Ness	0	0	0	0	0	0	0	0	0	0	0	0
Norton	0	0	0	0	0	0	2	0	0	0	0	0
Osage	8	2	1	1	3	2	2	0	0	0	0	0
Osborne	0	0	1	0	1	0	1	0	0	0	0	0
Ottawa	1	1	0	0	0	0	4	0	0	0	0	0
Pawnee	1	1	4	0	0	0	8	0	1	0	0	0
* Phillips	0	0	0	0	0	0	0	0	0	0	0	0
Pottawatomie	0	0	10	0	1	0	5	0	0	0	0	0
Pratt	0	0	0	0	0	0	0	0	0	0	0	0
Rawlins	2	0	4	1	0	0	2	0	1	0	0	0
Reno	0	0	0	0	2	1	1	0	0	0	0	0
Republic	0	0	0	0	0	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0	0	0
Riley	1	1	4	0	0	0	0	0	0	0	0	0
Rooks	0	0	3	0	0	0	0	0	0	0	0	0
Rush	1	1	1	1	1	0	0	0	0	0	0	0
Russell	1	0	0	0	0	0	0	0	0	0	1	0
Saline	0	0	0	0	0	0	0	0	0	0	0	0
Scott	0	0	2	0	0	0	2	0	0	0	0	0
Sedgwick	0	0	1	0	8	1	8	0	0	0	0	0
Seward	0	0	1	0	0	0	0	0	0	0	0	0
Shawnee	2	1	0	0	2	0	8	0	0	0	0	0
Sheridan	0	0	4	0	0	0	0	0	0	0	0	0
* Sherman	0	0	0	0	4	0	5	0	0	0	0	0
Smith	0	0	0	0	0	0	23	1	0	0	0	0
Stafford	2	0	2	1	0	0	0	0	0	0	0	0
* Stanton	0	0	0	0	0	0	0	0	0	0	0	0
Stevens	2	3	5	0	2	0	8	0	0	0	1	0
Sumner	1	0	0	0	0	0	0	0	0	0	0	0
Thomas	1	1	0	0	0	0	0	0	0	0	0	0
Trego	0	0	0	0	0	0	5	0	0	0	0	0
Wabaunsee	0	0	3	0	0	0	0	0	0	0	0	0
Wallace	0	0	1	0	0	0	0	0	0	0	0	0
Washington	0	0	0	0	0	0	0	0	0	0	0	0
* Wichita	0	0	1	1	6	1	13	0	0	0	5	0
Wilson	0	0	6	0	0	0	1	0	0	0	0	0
Woodson	0	0	0	0	0	0	0	0	0	0	1	0
Wyandotte	0	0	0	0	0	0	0	0	0	0	0	0
Cities :												
Fort Scott	0	0	3	0	0	0	0	0	0	0	0	0
Atchison	0	0	0	0	2	1	0	0	0	0	0	0
Coffeyville	1	0	3	0	2	2	3	0	0	0	0	0
Kansas City	10	10	27	6	22	1	12	1	8	1	4	0
Leavenworth	0	0	9	1	6	0	1	0	0	0	0	0
Parsons	3	8	4	0	1	0	0	0	0	0	0	0
Pittsburg	0	0	1	1	1	0	12	1	0	0	1	0
Topeka	3	3	0	0	1	1	16	0	2	0	0	0
Wichita	1	0	1	1	49	2	5	0	1	0	0	0
State Institutions.	187	0	0	0	0	0	0	0	0	0	0	0

* No reports.

Every citizen of Kansas is entitled to have the three most important events in his life recorded, namely, his birth, marriage and death.

DRUG ANALYSES No. XXXIII.

By L. E. SAYRE, Director; L. D. HAVENHILL, Chief; G. N. WATSON, Analyst;
C. M. STERLING, Microscopist.

Herewith is submitted a report of analyses of various preparations that have come into our hands through the inspectors.

A number of preparations have come to us asking our views with regard to the question of misbranding. It may be well to state here in this connection that the council on pharmacy and chemistry of the American Medical Association, under rule 6, makes the following statement under "Unwarranted therapeutic claims": "No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value."

It is fair also to state in this connection that the supreme court, as I understand it, will in the near future render a decision as to how far the administrators of the food and drugs law can go in deciding as to the question of "unwarranted and misleading" statements. Judge Phillips, of Kansas City, in the "cancer cure" case, seems to have decided in part as follows: "At no time in the debate in Congress was it proposed to hold manufacturers of proprietary medicines to criminal liability for misstatements as to the curative value of their products. It is a strained construction to read it into the statutes. Statements on the label of a bottle of medicine as to the curative powers, if regarded as 'misbranded,' is an entire misconception of the act. Statements as to curative powers would depend on the opinions of contending experts and upon the uses thereof."

When this decision is rendered it will clear up the question of the attitude of the law toward this subject.

Questions have been asked regarding the term "derivative." There is a doubt in many minds as to what this term "derivative" means when applied to certain organic compounds. It has been the common opinion that unless a product is made from a certain other product it cannot be a derivative of the so-called parent substance.

It may help to clear up the matter if I refer to a federal decision on this point, which says that a derivative may be an actual or therapeutic substitute, and it is not indispensable that it should be actually produced therefrom as a matter of fact. Reference is made to this decision in the Chemical Abstract of the American Chem-

ical Society for November, page 2978, which refers to the federal inspection decision, No. 112.

Lab. No. 2997, Insp. No. 1977. "Car-Sul." Manufacturer, Moore Chemical and Manufacturing Company, Kansas City, Mo. Car-Sul was claimed by the manufacturer to cure all skin disease—to be disinfectant, antiseptic, purifier, cleanser, insecticide and germicide. Car-Sul was found to be a preparation of creolin made soluble by sulphonation. Phenol was present.

Lab. No. 3397, Insp. No. 2077. "Liquid Quinegg." Manufactured by the Vosburg Company, Chicago, Ill. Claimed by the manufacturer to be a remedy for dandruff, itching scalp and falling hair. "Liquid Quinegg" was found to contain coloring matter, potassium hydroxide, a fixed oil, and about 74 per cent of water. No quinine or egg was detected. Misbranded.

Lab. No. 4528½, Insp. No. —. "Dunkley's Kalamazoo Celery Compound." Rosser Brothers, Topeka. Preparation was found to contain 13.33 per cent alcohol, extract of celery. Colored with caramel.

Lab. No. 4431, Insp. No. 5011. "Concentrated Oil of Pine Compound." Globe Pharmaceutical Company of Chicago, manufacturer. Concentrated Oil of Pine Compound has been subjected to analysis by the Bureau of Chemistry. "The sample examined consisted of a mixture of a fixed oil, a resinous substance, and a small amount of oil resembling turpentine." It was found by the federal authorities that "the composition did not in any way warrant the use of the name 'Concentrated Oil of Pine Compound,' and that the statement that it was such was false, misleading and deceptive."

Lab. No. 4596, Insp. No. 8690. "Tr. of Opium." Curran and Holcomb, Coldwater. Sample was found to contain 1.19 gms. of morphine in 100 cc. of tincture. Passed.

Lab. No. 4592, Insp. No. 8658. "Laudanum." McCoy Drug Company, Partridge. Sample was found to contain 1.4 gms. of morphine in 100 cc. of tincture. Passed.

Lab. No. 4588, Insp. No. 8608. "Laudanum." L. L. Constant, Belle Plaine. Sample was found to contain 1.33 gms. of morphine in 100 cc. of the preparation. Passed.

Lab. No. 4611, Insp. No. 8707. "Tincture of Opium." McElwain's Pharmacy, Pratt. Sample was found to contain 0.474 gm. of morphine in 100 cc. Below standard.

Lab. No. 4612, Insp. No. 8708. "Laudanum." Pratt Drug Company, Pratt. Sample was found to contain 1.17 gms. of morphine in 100 cc. of the preparation. Passed.

Lab. No. 4639, Insp. No. 2779. "Crown Phosphate." Mahaleb Manufacturing Company, Kansas City, Mo. Sample was found to contain 0.18 per cent phosphoric acid. Flavored with benzaldehyde.

Lab. No. 4648, Insp. No. 2788. "Gentian Bitters." Evans-Smith Drug Company, manufacturer. J. E. Youngberg, Ottawa, retailer. Gentian Bitters was examined in this laboratory and reported in Bulletin No. VII. The preparation was found to be little other than a beverage.

Lab. No. 4650, Insp. No. 2790. "Tincture of Aconite." Keefer's Pharmacy, Kansas City. Squibb's physiological test was used in determining

the aconitine. It was found to be 6.25 per cent of a standard tincture of aconite.

Lab. No. 4675, Insp. No. 2815. "Tr. of Belladonna Leaves." United Drug Company, Pleasanton. Found to contain 0.0408 per cent of mydriatic alkaloids. Passed.

Lab. No. 4691, Insp. No. 2827. "Epsom Salts." Rebsamen Pharmacy, Leavenworth. Examined for adulteration. Passed.

Lab. No. 4693, Insp. No. 2829. "Tr. of Rhubarb." J. M. Abeles, Leavenworth. Found to contain 35.1 per cent alcohol.

Lab. No. 4695, Insp. No. 2831. "Tr. of Belladonna Root." J. C. Fuger, Hamlin. Found to contain 0.0278 per cent mydriatic alkaloid.

Lab. No. 4700, Insp. No. 8737. "Essence of Jamaica Ginger." Mustard, Cherryvale. Found to contain 88.15 per cent alcohol. Passed.

Lab. No. 4701, Insp. No. 8735. "Essence of Peppermint." Squier Drug Store, Cherryvale. Found to contain 6.11 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4705, Insp. No. 8739. "Tr. of Belladonna Leaves." Dr. H. A. Brown, Iola. Found to contain 0.0278 per cent mydriatic alkaloid.

Lab. No. 4706, Insp. No. 8740. "Tr. of Iodine." Chas. B. Spencer, Iola. Found to contain 6.66 gms. of iodine and 5.29 gms. of potassium iodide in 100 cc. of tincture. Passed.

Lab. No. 4708, Insp. No. 8742. "Ess. of Peppermint." Burrell Drug Store, Iola. Found to contain 10.05 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4709, Insp. No. 8743. "Ess. of Peppermint." C. L. Cowan, Iola. Found to contain 9.32 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4710, Insp. No. 8744. "Ess. of Jamaica Ginger." Nichols Drug Company, Coffeyville. Found to contain 88.3 per cent alcohol. Passed.

Lab. No. 4712, Insp. No. 8746. "Tr. of Opium." Slosson Drug Company, Coffeyville. Found to contain 1.22 gms. of morphine in 100 cc. of tincture. Passed.

Lab. No. 4715, Insp. No. 8749. "Bay Rum." Palace Drug Store, Coffeyville. Examined for adulteration. Passed.

Lab. No. 4721, Insp. No. 8755. "Ess. of Peppermint." Chas. L. McAdams, Independence. Found to contain 11.27 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4722, Insp. No. 8756. "Spts. of Camphor." Caney Pharmacy, Caney. Found to contain 10.92 per cent camphor. Passed.

Lab. No. 4723, Insp. No. 8757. "Spts. of Camphor." J. H. Winkler, Caney. Found to contain 12.8 gms. of camphor in 100 cc. Above standard.

Lab. No. 4724, Insp. No. 8758. "Ess. of Jamaica Ginger." Howard Drug Company, Caney. Found to contain 88.15 per cent of alcohol. Passed.

Lab. No. 4725, Insp. No. 8759. "Ess. of Peppermint." Geo. P. Bush, Chetopa. Found to contain 1.27 cc. of oil in 100 cc. of essence, and a trace of added water. Adulterated.

Lab. No. 4726, Insp. No. 8760. "Tr. of Jamaica Ginger." F. J. Cunningham, Chetopa. Found to contain 90 per cent alcohol. Passed.

Lab. No. 4727, Insp. No. 8761. "Tr. of Aconite." C. S. Pratt, Fort Scott. Assayed by the Squibb method and found to be 62.5 per cent of a standard tincture of aconite.

Lab. No. 4728, Insp. No. 8762. "Spts. of Camphor." Kiddoo-Ball Drug Company, Fort Scott. Found to contain 12.25 gms. of the camphor in 100 cc. of the spirit. Above standard.

Lab. No. 4730, Insp. No. 8764. "Ess. of Peppermint." J. I. Sheets, Mound City. Found to contain 9.65 cc. of oil in 100 cc. of essence. Passed.

Lab. No. 4731, Insp. No. 8765. "Ess. of Jamaica Ginger." Wichita Drug Company, Wichita. Found to contain 89.5 per cent of alcohol. Passed.

Lab. No. 4732, Insp. No. 8765½. "Ess. of Peppermint." United Drug Company, Pleasanton. Found to contain 8.82 cc. of oil in 100 cc. of essence. Below standard.

Lab. No. 4733, Insp. No. 8766. "Spts. of Camphor." Shelley Drug Company, Wichita. Found to contain 8.89 gms. of camphor in 100 cc. of spirit. Below standard.

Lab. No. 4734, Insp. No. 8766½. "Tr. of Ginger." L. A. Lhuillier, Pleasanton. Found to contain 87.5 per cent of alcohol. Passed.

Lab. No. 4735, Insp. No. 8767. "Tr. of Opium." Higginson Drug Company, Wichita. Found to contain 1.22 gms. of morphine in 100 cc. of tincture. Passed.

Lab. No. 4736, Insp. No. 8768. "Ess. of Peppermint." Archie McVicar, Wichita. Found to contain 2.62 cc. of oil in 100 cc. of essence. Adulterated.

Lab. No. 4737, Insp. No. 8768½. "Tr. of Gentian Compound." E. W. Elting, Moline. Found to contain 2.86 gms. of extractive in 100 cc. of the tincture, and 44 per cent of alcohol. Below standard.

Lab. No. 4738, Insp. No. 8769. "Spt. of Camphor." Dr. John L. Reid, Towanda. Found to contain 11.67 per cent of camphor. Above standard.

Lab. No. 4742, Insp. No. 8772. "Tr. of Opium." A. H. Roby, Stafford. Found to contain 1.16 gms. of morphine in 100 cc. of the tincture. Passed.

Lab. No. 4743, Insp. No. 8773. "Tr. of Opium." A. H. Roby, Stafford. Found to contain 1.20 gms. of morphine in 100 cc. of the tincture. Passed.

Lab. No. 4749, Insp. No. 2858. "Sweet Spirit of Nitre." L. A. Lhuillier, Pleasanton. Found to contain 1.22 per cent ethyl nitrite. Sample was dispensed in transparent bottles. Sweet spirit of niter should contain 4 per cent of ethyl nitrite. Below standard.

The efficient enforcement of the child labor law and the inheritance tax law is dependent upon accurate vital statistics.

The Association of State and National Food and Dairy Departments believes that false and misleading patent medicine advertisements are a menace to the public welfare.

The religious press and church papers that carry patent medicine advertisements, came in for a scoring by the Association of State and National Food and Dairy Departments at their meeting in New Orleans, recently.

Put Kansas on the Map.

Kansas is not on the map of the registration area of the Sanitary Bureau of the United States, for the reason that the vital statistics gathered in Kansas, under our present cumbersome and inefficient law, are so inaccurate as to be of no value. One of the anomalies of the progressive civilization of the United States is the absence of vital statistics for the entire country. Strangely enough, our advance in sanitary living has gone unrecorded so far as the movement of population is concerned, and thus we can but approximate the effect our improved environment has had on morbidity and upon our people. Our dual form of government may be one of the chief causes for our delinquency in this respect. Many of the states have refused to make provision for the registration of births and deaths because it "costs too much."

It has been appropriately said that the recording of vital statistics is "the bookkeeping of sanitary science," and, if that is true, then much of our sanitary science is conducted in a very unbusinesslike manner, for there is no bookkeeping record made in many of the states, of which Kansas is one. Of course there is an attempt made to collect statistics and tabulate the records, but they are manifestly so inaccurate as but to accentuate the necessity of better methods for their collection, and the value of accurate records. Take, for illustration, the rule of Prof. Irving Fisher, of Yale, in finding the average duration of life, by dividing 1000 by the death rate. This rule would give the average age of life in Kansas, using our present figures, at about 130 years. This illustration should be sufficient to show how ridiculous and unreliable the statistics secured under existing conditions are to be regarded.

LEGAL ASPECTS.

Among the many legal aspects of registration of vital statistics may be mentioned one of great importance—the proof of citizenship. This may best be illustrated by the recital of a most dramatic incident which occurred at Ellis Island. About a year ago a seventeen-year-old boy, born in the city of Topeka, had, with his parents—who were foreigners—returned to the old country for a visit. The boy started back to America by himself, leaving his parents to continue their visit for a while longer. Having but a few dollars in addition to his ticket to Topeka he was held up at Ellis Island on account of not having a sufficient sum of money to prevent him becoming a public charge, he being taken for an immigrant. He

strenuously protested that he was a citizen of Kansas and a resident of Topeka, but he had no way to prove his assertion. He was detained in quarantine until inquiry should be made at Topeka and the documentary evidence should be forthcoming to prove his assertion. Not having a system of registration in this state or in the city of Topeka, no such evidence could be adduced. Fortunately, after several days of very careful search by the friends of the lad, the midwife who was in attendance at the birth of the boy was found, and seventeen years after the date of the birth a record of the same was made to the city department of health, was duly registered, whereupon the necessary official documents were forwarded to New York, and a free-born citizen of Kansas was permitted to enter his own country.

A similar occurrence took place at the same place with a Kansas citizen about a year before that time, and it was with the greatest difficulty that the woman was able to prove her citizenship and thus be saved from being deported to foreign soil.

Then, again, these records are of great value in the settlement of estates by descent, as witness a letter recently received from a secret service company, which is herewith given in full:

"INDIANAPOLIS, IND.

"Department of Public Health, Topeka, Kan.:

GENTLEMEN—Will you kindly give us the exact date of birth of———. Parties here claim he was born in Topeka. We would like to know who his father and mother is. Kindly give us their full names, as we are trying to locate his parents, too. We have been searching for the heirs of an estate left by his mother's brother, who died about eight months ago."

It is not infrequent that letters similar to the above are received in which official information of birth or death is absolutely essential to the settlement of estates or inheritance.

Another case with which Kansas people are quite familiar, in which neglected records are largely responsible, is the litigation concerning the age of the child in the now celebrated incubator baby case.

The Hon. Thos. C. Wilson, judge of the eighteenth judicial district, cites the following case:

"There can be no question but what the state, through its various subdivisions, should have a complete and accurate record of births, etc.

"Under the juvenile act it often becomes important in criminal cases to know the age of the defendant, and under the very loose system as it exists at present, it frequently is a matter of grave

doubt whether the defendant is sixteen years of age, or over or under, and to determine that matter it is sometimes necessary to submit the question to a jury, involving much time and expense.

"I recall a case which came up in this court some four years ago, where several defendants were charged with highway robbery, and the state was put to great expense to show that one of the defendants was over sixteen years of age, whereas if it had been a matter of public record the proof would have been easy and conclusive. This has happened several times in my experience.

"Other instances have occurred where a record of a birth would have been a very desirable thing to have had. For illustration, a Wichita family some year and a half ago visited Germany. One of the daughters was engaged to be married at the time that they left. The family was to be absent some eighteen months in Germany and Europe, and her betrothed concluded he would go over and be married in Germany. He made all of his arrangements to that end, not knowing it was more difficult to be married there than in this country, and when he reached there about the first thing that was demanded before the license was issued was record proof of the births of himself and his intended. The girl was born in Wichita, and there was no question about her age, but nevertheless there was no public record of her birth, and after much cabling back and forth, and after great expense had been incurred, the marriage was given up in Germany for the reason that they could not comply with the requirements of the German government, and the chief obstacle was the fact that there was no public record of the birth of the parties concerned."

PENSIONS.

It is common knowledge among the old soldiers in the adjudication of pension claims, especially widows' claims, the delay is often due to the inability to secure official documentary evidence of the death.

CHECK UPON CRIME.

The fundamental principle underlying the reporting of a death is the prohibition of moving a body without a burial or removal permit, which permit is conditioned upon the filing of complete report of the death with the local registrar. If bodies could be buried or otherwise disposed of without permission and careful inquiry as to the cause of death, many crimes would go undetected and unpunished. In England, during the five years 1901 to 1905, there were 778 murders reported, of which 278, or 36 per cent, were murders of children less than one year old. How many cases of infanticide go undetected and unpunished under our present system, which reports less than 5 per cent.

COMMERCIAL ASPECTS.

We have been of the belief for many years that Kansas has one of the lowest, if not the lowest, death rate of any state in the Union; but, unfortunately, we are unable to make proof of such belief. We are also convinced that we cannot be rightfully accused of race-suicide, but here again were we to consult the reports of some counties we would be inclined to fear for the future of the race in those communities. If the facts could all be accurately set forth, it would be invaluable as an advertising feature for the state. A number of commercial clubs, real-estate firms and immigrant agencies have, at various times, requested official records of deaths and births, for advertising purposes, but the department of health was unable to supply such information.

INHERITANCE TAX.

It is thought that more than the expense incident to registration would be saved the state by the accurate recording of deaths, for the use of the State Tax Commission in the enforcement of the Inheritance tax law. At the present time there is no official method by which they may be advised of the occurrence of a death subject to the provisions of this law.

CHILD LABOR LAW.

It is very evident that the child labor law cannot be effectively enforced until all births are recorded. Where the parents are not in sympathy with the law the proof of age is difficult and uncertain, and thus this most humane enactment is set at naught.

PUBLIC HEALTH.

Yet more important than the proof of citizenship, legal rights, child labor laws, etc., is the getting of accurate vital statistics, the interpretation of public health problems and their proper solution. It has been well said that modern sanitary science rests upon the foundation stones of accurate vital statistics. Disease centers, the loci of infection, cannot be fully known without them; and if not known it follows that no preventive measures can be instituted. Moreover, the efforts of the department of health in preventive measures are largely in the dark, and no gauge of the success of such efforts can be determined unless the movement of population is recorded. To illustrate: To properly measure infant mortality we must compare the deaths of the children under one year of age with the living births of the same year; thus the complete number of deaths as well as births must be recorded.

Vital statistics also serve to warn, as well as record, and thus the application of preventive medicine may be the means of saving much sickness and death.

Price declares that the reason America has no registration as a country is because we are not yet highly civilized and not very law-abiding. He supplements the statement by saying that the nation is now in its second stage of development, and we may expect that more time will be given to how to live.

Governor Hastings, of Pennsylvania, had a very clear conception of the registration of vital statistics when in his message to the legislature of that state he used the following language:

"In an enlightened community there live but few people of mature age whose birth, marriage or death does not at some time become a matter for the cognizance and consideration of legal authorities, The attainment of majority, with its rights and duties; the fact and date of wedlock; the inheritance or conveyance of property; parentage and nationality; place, date and cause of death, and interment, and many other questions of a sociological, economic, sanitary, or even historical character, often assume much importance with reference to many of our citizens. In the absence of a state system of registration, many of the citizens are deprived of their legal rights, or are enabled to deprive their fellows of their legal rights.

"The deeds of the murderer, the abortionist or the suicide can be easily concealed from human view until decomposition has obliterated all evidence of crime. To obviate these dangers effectually it seems to be necessary to require the issuing of a burial permit by some constituted authority, and to make this issue contingent upon the presentation of satisfactory information respecting the cause. This official act ought to be made the first step in the state registration of deaths."

Vital Statistics.

"An efficient vital statistics law is necessary before we can prove that Kansas has the lowest death rate among the states."

This is a brief but pointed statement made in the July BULLETIN just issued by the Kansas State Board of Health. It sets forth tersely but emphatically one of the many good and sufficient reasons why the Kansas legislature should lose no further time in placing such a law on the statute books of this, one of the most progressive states of the Union.

What an asset it would be to Kansas if she could advertise to the world that her death rate is the lowest *pro rata* to population of any of the many states of the Union. There is reason to believe that this is the case. But there is no way of proving it. And

simply because the state lacks a law which would compel each of its communities to keep a correct and complete record of its vital statistics.

There are other reasons aplenty why such a law should be enacted. Records of births and deaths are often of the utmost importance during after years in the just settlement of estates. Records of marriages are just as important. Nor can anything be more important to any community or state than the prompt reporting by physicians to the properly constituted authorities of all cases of contagious and infectious diseases which come under their observation.

It is passing strange that such a law is not now in operation in this state. But there is no real reason for further delay in the premises. It would be well for the voters to jog up the memory of the men who are running for the legislature in their districts, on this subject. Kansans appear to be proud of the fact that they are progressive in politics, and many of the questions on which they take progressive stands are not of as essential importance to themselves and their state as this matter of vital statistics. The enactment of an adequate law on this subject would be a progressive step worth while, a move of value to the whole people of the state.—*Editorial, Topeka State Journal.*

"Bleeding Kansas."

Mr. W. J. V. Deacon, statistician of the State Board of Health, in an exhaustive paper read before the State Medical Society, gave expression to the following sentiment, which is certainly apropos to the present conditions in Kansas:

"Kansas; poor old Kansas! Bleeding Kansas! Bleeding money, wheat and corn at every pore. 'Tis said, 'A land of smiling sunshine, of winding streams, where you have but to tickle the soil to make it laugh a harvest. A land dotted with schoolhouses and growing towns and villages, called cities by divine right of prophecy. A land of pigs given to adipose, of sleek cattle, of strong horses, of handsome women, of bouncing babies, of homely, rugged men. A land where no one dies except through accident or overeating.' Poor, bleeding Kansas cannot afford to pay twenty-five cents to register those bouncing babies, and while for years they have duly registered their fine pigs, their cows and their horses at an expense of from twenty-five cents to five dollars each, they deny to the future citizen, the potential fathers and mothers of this great republic, the right of registration, the establishment of their legal birthright, for the pitiful sum of twenty-five cents.

"Have you a little fairy in your home? If you have she is not registered. No human eye can pierce the future; and while you by study, industry and thrift may think to leave that 'fairy' far above the reach of the breakers of misfortune, who knows what may arise in the future to require that little one to prove herself your child, your heir, and the right to exercise those sovereign rights of citizenship to which estate the little one has been born, and in which rights you to-day think her secure?"

"The state owes to every citizen the right that the three principal events in the life of each of them shall be a matter of public record, and these three events are the birth, marriage and death. This state owes it to you to maintain these records, a duty it has shamefully neglected."

Pertinent Questions.

Why conserve coal mines and not conserve the life of the coal miner?

Why conserve the cotton plant and expend \$500,000 to fight the boll-weevil and not conserve the people who are to be clothed with the cotton?

Why conserve the life of tree and fight the San Jose scale, and not conserve the people who eat oranges?

Why conserve the life of the forest and not conserve the life of the forester and of his children?

Why protect tree life and plant life and neglect human life?

Why protect cattle from Texas fever and not protect people from typhoid and malarial fever?

Why protect pigs and forget the children?

— *Senator Owen, of Oklahoma.*

State Board of Health Notes.

"Dare to be a Daniel"!

No uncared for tuberculosis after 1915.

"I can't" — is a sluggard, too lazy to work.

The epidemic of poliomyelitis is at an end.

Dealers are required to handle eggs on the "loss off" basis.

Kansas needs a law preventing the adulteration of paints and oils.

Kansas bread and butter is not only a good quality but must be full net weight also.

The traveling tuberculosis exhibit is showing to "standing room only."

The utility of typhoid fever vaccination has been scientifically demonstrated.

A jail sentence for the person who adds water to milk that is offered for sale.

Public opinion is the final expression of the people "polished by the friction of a nation's thought."

The only solution [of the country slaughterhouse] is the establishment of the county or municipal abattoir.

The net weight bread and butter provision of the weights and measures law of Kansas has been upheld by the supreme court.

Thirty-five per cent of the large wagon scales are off more than ten pounds to the ton, according to the recent test in ten cities.

Up to the present date more than 200,000 people have seen the exhibit and heard the lectures of the traveling tuberculosis exhibit.

The isolation and artificial cultivation of the lepra bacillus give birth to the hope that a bacterin may be successfully used for the cure and prevention of this disease, which has been the scourge and horror of the centuries.

THE NEW YEAR.

New Year's Day is the universal moving day. Out we go, whether we will or not, from No. 1910 to No. 1911, and January First, as the very name indicates, is the door of our new house. Janus was, as Ovid tells us, the doorkeeper or janitor of heaven, and janua was the common Latin word for "house-door." I do not wonder that we are to be evicted from our present house, for even in the term of a single year we have proved ourselves pretty bad tenants. How selfish and thoughtless and wrong-headed and wrong-hearted most of us have been, and what a mess we have made of the premises!

I do not know what use our landlord, Father Time, makes of the old year when we have done with it, but what a house-cleaning must be necessary before he can let it out to other occupants! And, on the other hand, what a fine thing it is to have a brand new year to move into, as pure and spotless as the celestial regions and quite as fit for angels as for men. Nothing is cleaner than the future, and January First is really the possible door of heaven. If we make anything less than a heaven out of our new apartments it will be altogether our own fault and not that of the janitor.—*Ernest Crosby.*

ERRATA.

The comparative table referred to on page 23, appears on page 151.

The reports given on pages 152 to 157, inclusive, should be included in the Secretary's report to the governor, following page 23.

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